ELEMENTARY PHILOSOPHY.

PART I.

BEING THE SCIENCE OF REASONING

AND

THE ART OF CORRECT REASONING
ACCORDING TO SCIENCE;

OR,

LOGIC,

CRITICALLY TREATED AND APPLIED.

BY JAMES M. WILLCOX, PH. D.

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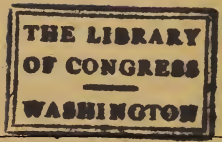

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DEDICATION.

To the American people, who claim to be the embodiment of human progress in what is great and good, and the depositary of a stupendous "manifest destiny," this work is respectfully inscribed.

God grant your aspirations to be substantially and rightly founded; and, if so, may He point out unmistakably the whereabouts of the proper foundation! As an instrument in His hands, the author desires to assume and do his part; and, in the pursuance of that self-imposed duty, he has, amidst many cares of an active business life (which fact may well be a valid apology for many imperfections), collated the results of a long study of Christian Philosophy, which are herein submitted to you, with the assurance that a departure from, or non-conformity to, the principles of Christian Philosophy, will work disaster and humiliation instead of prosperity and fame.

We have all that could be asked of Nature for the realization of our hopes in time; ample territory in a double continent; geographical position between the eastern and western extremes of the Old World; all

varieties of climate and soil; length, breadth and wonderful fitness of water communication; incalculable resources in all minerals; established self-government and an intelligent activity that is the wonder of mankind. Here is an array of advantages and means such as heretofore the world has never seen. Are they sufficient? Most assuredly not; for they are all adjuncts, not principles.

In days of pagan society, man was but a constituent of the state, and responsible to it alone for his political acts. Pagan republics, kingdoms, empires rose and fell; for pagan virtues, philosophies and religions, though imposing, were but hollow foundations. Christianity has emancipated man from the thraldom of the state and made him responsible to God for his political acts; has given him a political conscience, through which he knows the rights of, and feels the pressure of duty to, his countrymen and all mankind. The same means only that has led us where we are, will lead us to the end. It is a means above the natural reach of man, and the abandonment of it would throw us back upon those mere human means that have so often failed.

Physical prosperity is not the highest; physical strength is not the strongest; physical wealth is not the most lasting. Policy is not principle; license not liberty; politics not government; submission not obedience; gratification not happiness; science not wisdom; expediency not morality; and loose intellectual speculation is not the solid Christian Philosophy, the

accurate and enlightened thought, that has withstood materialistic and skeptical degradation for many centuries. The fierce assaults of these upon society have recently grown fiercer, their allurements more insidious than ever; and where men vary and may vary as much as we do in theological creeds—too much so to effect a solid religious union—it becomes us, whose philosophic science differs less, to present a solid wall of Christian Philosophy in defence of our common Christianity. The understanding of orthodox Philosophy and the defence of fundamental Christian principles are the defence of our prosperity, our social integrity and of our children's inheritance. To the consideration of his fellow-citizens, then, this work is hopefully submitted by

THE AUTHOR.

EXPLANATION OF THE TITLE-PAGE.

THIS volume being a treatise on the elements of Logic, is entitled "THE FIRST PART OF PHILOSOPHY," because Logic is one of the four parts, and the first, viz.: Logic, Metaphysics, Ethics and Physics, which constitute what is properly termed Philosophy. A sufficiently full explanation of this is reserved until after a better preparation of the mind to understand it; and it is made in "The Division and Definition of Sciences," at the end of the volume. The remainder of the title of the treatise can be fully understood only in the progress of study, but it contains the total comprehension of the meaning of the first science that ought to be studied by any one designing to lend himself to scientific pursuits.

CONTENTS OF PART I.

PROLOGUE.

"*The noblest study of mankind is* MAN."

THESE are the words of a philosophic poet, and, if true, they belie the spirit of this age we live in, whose absorbing study is to create and multiply man's wants and to gratify them; not to adequately understand the essentials, and the destiny these point to, of man himself. If the poet be right, the spirit of our age is wrong. The would-be philosophers of the times say that they have studied and know man; and they unfortunately play an important part in directing him. They have given him much mental work to do, and not a proportionate mental peace and satisfaction. What stimulants have they given him to work? The desires of the flesh, the desires of the eyes and the pride of life. When these are partially satisfied (for they cannot be wholly so) the result is called "material prosperity." For this "material prosperity" human genius and modern science are restlessly directed to subduing, more and more, the ancient powers of nature; and the passions and yearnings of man's lower nature are ministered unto. Education is certainly more diffused and most men's understandings

are more cultivated than formerly; but in what behalf? Certainly in the behalf, mainly, of his material, not moral, well-being. Individual wisdom or culture is no greater now than in the days of Solomon, of Socrates, of Cicero, of Paul or of Augustine; and I am not sure that the aggregate of human intellectuality is to-day greater, in proportion to numbers, than it was then. It is more spread out, the coating thinner and reaching further, but clothing more sparely the leaders of this age than it did the giants who are dead, those "grand old masters whose distant footsteps echo down the corridors of time." Pride, ambition, ostentation, greed, the love of novelty, luxury and style, and human honors; these are the gods whose kingdom is of this world and in whose service the science of to-day, physical science, is wearing and tearing the forces and faculties of men without rest. How little is done for self-denial, humility, purity and faith and those many other Christian virtues whose service "does not pay," and whose only reward here is interior peace!

How mysterious to them were these virtues when first held up to the masters of politics and of physical science, the pagan Romans of eighteen centuries ago! And how mysterious, after the lapse of that long time, are they to the leading scientists of this day! Is science leading to faith or doubt; to God or from Him? Does it glorify God and humble man before Him, or does it glorify man in his own eyes and call God to account for what it does not understand, or drag Him

down to the level of blind, unreasoning force? Does it seek human happiness in exteriors; satisfaction in never-ending strife for the unattained; hope in uncertainty and bliss greater than that of sweet love in hating and reviling whatever is opposed to it? Certainly, were I summoned to behold the working of Satanic powers on earth, it is just such signs as I have indicated that I would look for. The spirit of the age "rages and imagines a vain thing." It has discovered that knowledge is power, but has not discovered the ultimate utility of the power.

If the noblest study of mankind be man, it is man as God has made him, with his intellectual, rational, affective and moral faculties; not the man of the materialist, of the skeptic, of the scientist, of the politician, of the soldier, of the utilitarian or of the humanitarian. It is man as the philosopher regards him. This is the noblest study of man that has been pursued for some thousands of years, and the noblest study of him that will be pursued, to the end of time. In Logic we shall study his perceptive and rational powers and operations as a means of knowledge, preparatory to a broad philosophic view of him in his entirety. We shall discover in Metaphysics the nature of his ideas and their origin, and shall study those wonderful human faculties that grasp, retain, store up and order all knowledges attainable; as also the nature and natural destiny of the human soul, the subject of them all. Thereafter we may, in Ethics, study man's subjection to natural moral law and its foundation; and

in all we shall endeavor to keep in sight the utility of what we are doing, and to derive intellectual and pleasurable satisfaction from it.

It will not do to grant as true the poet's proposition that "the noblest study of mankind is man." God and Infinity, and Truth and Good, as being of and coeternal with God, are grander and nobler studies; and our noblest study after these is to know and see things truly, just as God knows and sees them in their real being, as nearly as we possibly can with our limited minds; not in their mere qualities as physical science views them. Weight, color, hardness, affinity, attraction, repulsion, motion, extension, mode, form are all qualities, not realities; and it is realities that we shall seek for in Metaphysics.

Logic is commonly regarded as intensely dry and uninteresting, and as an unprofitable study. Especially is this the case with those who know little or nothing about it. The same may be said of Metaphysics, with this addition, that the common mind, knowing nothing of it as a science, and not recognizing its own metaphysical conceptions as such, believes it to be simply a system of incomprehensibles. Ethics, to uneducated minds, is a confused aggregate of moral particulars, modified in each by self, circumstances and prejudices, and to such an extent that each individual is pretty much a casuist, determining cases by a code of his own. He is a partial judge in his own causes and in those of others, and is unable to locate the force of moral obligation anywhere in par-

ticular in the entire universe. As for Philosophy, it is either indefinable or confused with simple science. As we proceed, we shall learn, in the proper place, that Science is a series of systemized reasonings deduced from facts or from other reasonings, through premises furnished by evidence or authority, and going back to self-evident metaphysical truths as fundamental knowledge. Such truths are universal and eternal; all others are to our minds discovered and accidental.

Reasoning is a process of the mind and Logic is the science of reasoning. Human thought is much broader than reasoning; and all experiences, authorities, sciences with their elements and all eternal metaphysical truths are correlated within its realm, the realm of Philosophy, which is the science of that human thought which contains all human knowledges. Philosophic wisdom is a structure built up of all knowledges—grand and sublime; permanent, not of the present nor of the past; and he who has it, has a mental abode wherein to dwell which other men have not and do not conceive. His quality is changed. Is this abode worth attaining? Every man judges of knowledge according to his stock of it and his quality; that is, his worth as manifested to himself. The man of inferior quality cares little for the fact that it is inferior; but the man of superior quality has a consciousness of the fact, knows his quality to be that which makes him who and what he is, and would suffer any other loss whatsoever rather than that of a

particle of his mental excellence. This would be a partial destruction of himself, and every normal nature recoils from self-destruction as the greatest of evils to it.

This volume is intended for those only who wish to improve themselves mentally, to understand themselves better, and who already set a value on their quality in the scale of existences. It will interest no other. To such the study of Philosophy crowns all other knowledges. It is a learning to look upon them and upon all things in a way analogous to that in which their Author and Creator himself looks upon them; from a stand-point high above the creations and conceits of men, and with an eye fashioned in the likeness of that of God. If these reflections move in you desire, the desire is healthy. Go on and read, and I hope that progress will keep alive desire. If they do not, to read might be simply to waste, and the book would benefit you but little.

It is not my aim to write a mere class-book—a book of dry nomenclature and explanations in the ordinary synthetic way. I wish to start with a mind mature in capacity, earnest in purpose and desirous to understand. To such I hope to make, by analysis, the study of mental sciences intelligible, and therefore interesting, in slow and short advances (a little wayward as I may be drawn) along the foreground only; noticing but such elements as are important for my purpose, and pointing out but those relations of things whose perception should afford mental pleasure or

whose knowledge will be of important utility. I ask your attention especially to my reservation of the right of waywardness, as by this I hope to afford illustrations and present important reflections which our paths may naturally lead to, and to which the strictest methodical writer might object. A book can be made more interesting and instructive in this way, although not according to the established rules for class-books; and meditation upon the different subjects of mental science is so suggestive to a trained mind of important reflections, that it is better they should be made by the author than left to the chances of each reader's making them for himself. In this, Philosophy has the right to be exceptional, for its field is full of objects, since it embraces everything.

I hope we shall go far enough for most minds to properly appreciate themselves and for some to purge themselves of their conceits; for the more we know the greater appears the expanse of the unknown, and the better we realize how small we really are in its presence. The ardent student will go further and will thirst for the scholastic Philosophy of the Middle Ages. He will arm himself with his little rudiments gathered out of this, and will there be hurled like an atom in the fierce dialectic contests of champions whose powers of abstraction were superhuman, whose thrusts of distinction and sub-distinction went straight to every flaw, and whose doubly-refined mental weapons dazzled with their very refinement. He will behold much that was only contest—game for the love of victory, like any

other game; and he will take wisdom, too, from deep sources, from those sublime old Doctors who evolved Christian Philosophy from chaos, fixed it upon eternal certainty and planted land-marks throughout the mental realm that skeptics cannot uproot, and which will guide Christian philosophers of all sects to the end of time.

LOGIC.

We naturally commence with Logic, by which we shall get a better and clearer use of our understanding as an aid towards all knowledge that we shall ever pursue. It has the repute of being dry, hard and of little real utility—of being a study whose end is the art of splitting hairs, of puzzling adversaries, of dodging blows, of avoiding truth and of making generally the worse appear the better part. All this is not interesting to an honest mind, and Logic is too often made uninteresting to students. The reason is that it appears at first too objectless, or that its object is vague. Now, I hold that in Logic, as in all studies, if a worthy and intelligible object be presented to an earnest mind, interest will be aroused and an efficient motive for work will be supplied. The mind may weary in its powers, but will not weary of its work if the work interest it; but a true, pleasurable interest cannot be felt in anything that is not understood. This last appears a false statement, from the known fact that students are thought to be most interested in what they are investigating. It is, however, discovery

that interests them, not the as yet undiscovered. It is desire, pursuit and victory, not the unknown game, that excites the hunter. The game may not be known, but chase and hope and victory are known, and the satisfaction of desire is known; and it is these that give excitement and pleasure. These supply the motive and the work follows. The mind tends always to understanding, and is as much the subject of motive potency as are bodies. Present a sufficient object to its attention, and attention will be moved. Present several ideas that have relations of some kind to each other; those relations will be seen and a judgment will be moved and formed. Knowledge is both a pleasure and a thirst to the mind, and entirely occupies it pleasurably. Present, then, the object of logical study clearly, and a pleasurable interest will move to that study; maintain its explanations and the objects of its several parts clear, and the pleasurable interest will be sustained. Arouse in any one a military spirit, a law spirit, a medical spirit, a gaming spirit, a logical spirit (all of which have their origin in an especial appreciation of their respective objects), and you will awake sufficient action in response. To a raw and ignorant recruit, military drill is objectless and distasteful, although he is told that its object is victory over his enemies. He is ordered to lift his head, turn out his feet, stand erect, to place his arm stiffly by his side; and he wonders what these things have to do with victory. He has not sufficient intelligence of their relations to other things to interest him. Behold,

however, his comrade, a smart, ambitious youth, full of military intelligence, who appreciates the utility of drill and knows all that it accomplishes in trial. He experiences an interest and pleasure in the discipline that is to fit him to be an accomplished soldier, and which is a necessary stepping-stone to distinction, wealth and fame.

Scientific writers generally overlook the creation of an interest in their work, depending upon people to become their readers through an interest previously existing. This restricts very much the number of their readers. To create a love for his subject should be held by a scientific writer to be a prime duty; and subjects, great and small, are in this like men, great and small, that the interest will much depend upon a proper presentation. If, therefore, I can sufficiently make clear the object, aim and utility of Logic, and maintain them clear, the reader of thus far will continue, *pari passu*, to absorb truth. I shall make an effort in my new way, adding much to the mental labor, since the labor of generalizing is much greater than that of particularizing in the traditional way.

The method will be mainly that of analysis. When a writer's object is to teach science of any kind to those unacquainted with its rudiments, the most intelligible and satisfactory way is to start from the clearest known facts; then proceed in some manner to the discovery of the unknown. The clearest known facts are those of common knowledge and experience, and from these progress (according to order of knowledge)

in physical sciences and in metaphysical sciences proceeds in opposite directions. In physical sciences knowledge is added to knowledge of what is exterior to the thinker, and progress is, according to growth, synthetic; whereas in elementary metaphysical sciences knowledge is deduced from knowledge of what is interior to the thinker, and progress towards the unknown is, by way of decomposition, analytic. The synthetic method, which is proper for higher metaphysics, is unsatisfactory to a beginner, although clear to a scholar. It starts with definitions and presupposes much knowledge; whereas the analytic starts with the consciousness of one's own existence, ideas and powers, which are, to a beginner, the first, strongest and most satisfactory of all knowledges. Proceeding from these first facts, the genesis of further knowledge is followed intelligibly, and understanding follows understanding easily. From a study of the ordinary synthetic class-books of Logic and Metaphysics, I do not hesitate to say that an able and earnest beginner can make but little progress with them without a teacher to analyze the difficulties that constantly obstruct his way; and I equally do not hesitate to say that the same beginner would follow a well-ordered analytic treatise intelligently and pleasurably, without aid. After thorough acquaintance with the ground acquired in this manner, Philosophy must grow by relations, which is by synthesis.

In entering upon this study, you will naturally ask yourself why you do it at all, and I will reply for you

that you do so, first, in the pursuit of truth, and, secondly, in the pursuit of utility. Your intellect seeks truth, impelled by its own nature, spontaneously, just as heavy bodies seek the ground; and it seeks, and can seek, nothing else. It is a faculty whose dealing is with truth only, as that of memory is with the past only, as that of the eye is with light only, and as that of the ear is with sound only. Truth that interests the mind draws its action unresistingly, unless this be diverted by an act of the will.

As for the utility of Logic, it is the thorough knowing and sharpening of your reasoning powers, as a means of reaching truth, avoiding error and better understanding any science or knowledge whatever, that you may wish to acquire.

To these ends, we shall first examine the elements and processes of reasoning, and arrive at the art of deducing correct conclusions and destroying false ones, according to rule; and whilst we are doing so, we shall look for the sources of truth themselves. Logic, therefore, does not end with theoretical science; it is also practical; and the dialectician becomes as skilled in the art of attack and defence as the trained swordsman. It is both a science and an art; the science of reasoning and the art of correct reasoning according to science. It teaches the elements, nature and order of rational process, and how to best employ all in the cause of truth; and the desire for truth is universal, for it is a reality—a possession; whilst its absence is a void—a deprivation. It is a gain, and

error is a loss. Now, to understand elaborate functions we must first know elements; and to arrive at these, we will take the first step in examination by a grand look at the whole universe—real, possible, finite, infinite, temporal and eternal.

All known things have two existences—one in themselves and one in the human mind, according to its conception of them—so grand and comprehensive is the human mind. The first of these is on the part of the *object* thought of, an *objective* existence; the second is on the part of the thinking *subject*, a *subjective* existence. Something exists; the mind thinks of it; when, instantaneously, two things exist, viz.: the original object and the something in the mind, the thought of it. This thought is termed in Logic an *idea*, and the idea is the first radical of rational operation. It is that which exists in the mind whilst the mind simply thinks. My own *idea* which exists in my mind can be seized by another act of thought; in which case it has an *objective* existence, whilst the act which seizes it is *subjective*. The *objective* is on the part of the known thing; the *subjective*, on the part of the knower. That may be anything of which an idea may be formed; this is only my internal version of it. That is passive under the activity of this. There is always something in the mind to think about, and that something is the elementary idea. In Logic it is not important to know the nature or origin of ideas, only to know them as being the simplest and first element of reasoning. Their nature and origin

will be considered in the more advanced science of Metaphysics.

It is well, however, to call your attention to the fact that the formation of an idea being essentially a human act, as distinguished from a mere animal act, is a compound act, as all essentially human acts are. We are here somewhat within the domain of Metaphysics, as we shall frequently be during the consideration of the different parts of Logic; not merely *eruditionis gratiâ*, but likewise for a more complete understanding of the subject and for a better distinguishing of logical and metaphysical conceptions. Man is both animal and spiritual, and performs certain animal acts as preliminary to intellectual completion of them. Among these is simple *apprehension*, which man, in common with other animals, performs; and the intellect elaborates it into an *idea*. Many logicians term this *intuition* (from *tueor*, to behold); but I object to this term, for the reason that simply beholding does not put the mind *in possession;* and to have appropriation, ownership, possession and treatment of objects by the mind is the notion which we form of mental action.

The faculties which elaborate simply apprehended things into *ideas* or *conceptions* are frequently termed *elaborative* or *discursive*. The process is certainly an *intellectual* one, and it is better to be more precise and call the elaborative faculties *intellectual* faculties. The nature of these we shall separately consider in Metaphysics, and shall reduce them to two distinct pri-

mary faculties. Let us, then, be very precise, and say that the first act in the order of knowledge is simple *apprehension*, and that *idea* is a product of *intellect*.

Several ideas may exist simultaneously in the mind. Indeed when a comparison is made or a judgment formed, they must, of necessity, coexist, in order that their relations be perceived along with them. Sometimes they are perceptions of external objects, with their qualities of color, size, form, &c., all perceived together—when they are called *concrete ideas;* and these much resemble the apprehensions that brute animals have. Sometimes also ideas drop off the qualities of things, regarding subjects as abstracted from their qualities; as when you think of mankind generally, or vegetation generally, in which case you have no color, size, &c., in your mind. Such ideas are called *abstract*. One quality may be abstracted from the whole, or all of them from their subject; and such ideas also are abstract, as whiteness, hardness, smallness, virtue, vice, &c. The brute mind does not form abstractions; and abstractions are not regarded as inherent in any particular subject, only in specific subjects generally. From this you will understand that all *concrete* ideas are *particular*, representing a particular object or a number of them; and that most *abstract* ideas are *universal*, which means without regard to any number of their objects considered. Not all *abstract* ideas are *universal*, for you may have an universal idea of *motion* and a particular idea of a body in which it inheres; in which

case the idea of the motion would be *abstract*, but would become *particular* and not *universal*. Some ideas are called *sensible*, because derived from the exterior senses — as sight, color, sound, &c.; and some are derived from interior memory, imagination or intellect, and are termed *intelligible*. There are, of course, different degrees of *clearness* and *completeness* in ideas.

I wish now to recall your attention, in a very especial manner, to the distinction made above between ideas *particular* and *universal*, as a confusion of these is a common source of error. *Particular* is anything short of *universal*, and *singular* you will understand as being a solitary part of *particular*. The idea of the *universal* cannot be reached by adding and multiplying numbers, but only by abstracting for contemplation those essential attributes which are common to every normal individual. Any number of men of the whole human race, living or dead, may be spoken of as *particular;* but when the whole race of mankind is thought of, you think of the attributes of man without a thought of individuals or numbers of them. You comprise in your thought not only all that exist, but all that ever did, will or can exist; in short, all *possible* men. If you say *man is rational*, you mean all possible men, not merely all present and past; and you employ *man* in an *universal* sense. When you think of any genus or species of things, your idea is *abstract* and *universal*, because you think, first, only of attributes and not individuals; and, secondly, you

think of all possible, without limitation. All *universal* ideas are *abstract*, but not *vice versa*, as we have recently seen. The idea of the *universal* is formed in most cases like the idea of *the infinite*, by denying limits; and series upon series of numbers, multiplied indefinitely, cannot bridge the gulf that separates the *infinite* from the *finite*, or the *universal possible* from the *particular*.

All objects or numbers of objects included in the *universal* are called its *subjects* or *inferiors*.

Upon *possibles* no limitation in numbers can be placed, and nothing less than the spiritual mind of man can conceive the non-limitation of *possibles;* consequently, nothing less can conceive the *universal*. Even by man such ideas as *universal*, *eternal*, *infinite* are inadequately conceived by negation, yet they are adequately conceived by God as the positive things which they are. They are in the order of His intellect, but not in that of ours; and are intelligible to an adequate intelligence.

I wish to make your understanding of this subject and of the limitation of the human mind as clear as possible, because the lack of such understanding has made many a skeptic and atheist by shaking belief in what simply is not comprehended, no matter how well proved. Many indeed are so irrational as to refuse belief to whatever is not made manifest through the external senses or proved by *a priori* demonstration, which is like mathematical equations. It requires but a poor logician to perceive

that, although a thing be not understood or proved by the senses or *a priori*, it may nevertheless exist; yet the skeptic does not rise to this logic. The skeptical or atheistic mind is negative, and believes only what is easy of belief, what is so easily demonstrated that the mind can rest comfortably and easily, and, as it were, seeing by sense what it believes. This is a very material mind, and one that cannot rise to a belief in anything whose demonstration excludes all intellectual doubt, yet which is not proved like a mathematical conclusion. This is simply absurd and unworthy of the human intellect. God has so constituted us, according to His inscrutable design, that superior minds reach a belief in Him through reason only perhaps; the mass of mankind through the concert of all the faculties; but, no matter how, it is always through sufficient light for that purpose; and to bury that light in negative darkness is, like the burying of the talent, a most serious dereliction. Belief, however, in the infinite is not the understanding of it; and the most towering intellect is infinitely short of such understanding, because itself is finite. It seems easy to comprehend that everything which acts must act according to its nature; that its acts are limited by its nature; that they are qualified and determined by it, and that they must be in the same order as that nature, absolutely incapable of ever going above or outside of it. Sight is in the same order as the eye; sound in the same as the ear; taste in the same as the tongue. The eye cannot hear, nor

the ear see, nor can the tongue see or hear. The idea is absurd and monstrous even to the skeptic. Let him, then, make an effort of intelligence, and reflect that *sense* is in the order of the *organic*, *material* and *particular; intellect* in the order of the *spiritual*, *abstract* and *universal;* that both are finite, and that their acts cannot go beyond the order of the finite. Nothing whatever that is finite can by act reach the idea of the infinite, or become an integral part of it, or approach it, or do anything further than know that it exists, infinite and perfect in every way that the mind can conceive, and in an infinity of ways that the mind cannot, and never can, conceive. When the skeptic's grovelling mind can awake to the perception that its powers are limited; that there is a region of existence beyond them, and, shaking off dull and material sense, with its yearning to see and feel, shall rise into pure intelligence, he will understand, not the infinite, but that the infinite exists infinitely.

The finite mind of man stops very far short of infinity, and the *estimative* power of his senses is soon exhausted. The Almighty has set a lesson in the stars, as though to lift the skeptical mind from apathy and the caresses of sense that beguile it. The immeasurable Universe is visibly spread out, and distances inconceivable are made manifest to human vision. How much more inconceivable are they when the power of vision is multiplied by telescopic powers, and nebular systems in embryo appear in the

remotest depths like vast spectres among the Suns! The astronomer, with his highly cultivated sense of size and distance, is borne so far in his contemplation of them that all *estimation* ceases; that "fancy droops, and thought, astonished," leaves sense behind and pursues with intellect and abstraction alone. He knows that there are existences beyond sense and *estimation*, beyond conception and limitation, by evidence of induction, as we, by evidences of many kinds, know the existence of an infinite first cause—of God.

How pitiable is the condition of the skeptical mind, incapable of making progress, stationary in doubt, and deteriorating in absolute stagnation!

You will observe that I have used freely my reserved right of going aside; but the diversion seemed natural, and I hope it is not without profit.

I think it well to here recall to your minds the distinction made between the *particular* and the *universal*, to more deeply impress this important distinction, and to point out that herein lies the principal difference between the human and the brute mind. Many philosophers maintain that the brute mind is entirely material, the result of organism only, merely passive under the action of whatever moves the senses, imagination and memory. According to this view, it would be simply moved by impulses, its will be constrained by appetites, desires and passions, without ever being free. The deductions from this view are according to sound philosophy, because without intellect there is no freedom of will; but I cannot admit the entire ma-

teriality of the brute mind, and my opinion on this subject will be given more fully in the science of Psychology. It is sufficient here to say that the minds of irrational creatures differ; some being more highly organized than others, and many of their species possessing different systems of faculties from each other. The highest, however, are entirely destitute of what is called *intellect*, and they have, in consequence, no powers of reflecting, abstracting or generalizing, although possessed of some organic faculties in common with man, among which is organic memory, oftentimes equal to ours. They are capable of *impressions*, but not of *ideas*, in the true sense of the word; these being the product of the intellect acting, through its meditative powers, reflexly upon *sentiments* and *relations*.

Ideas are not *impressions*, but *intellectual forms*, mostly derived proximately or more remotely from them.

We know, by general observation, that the brute mind perceives only the *concrete* and *particular*, the subject and its modes together, the individual as it is, without separating by analysis the individual from his qualities or parts; as, *a person friendly*, *a person hostile*, *a thing loved*, *a thing hated*, &c. All men may seem, to a wild animal, hostile; but only *seriatim*, as they happen to appear; not as mankind, of which the animal would have no perception, except the particular numbers of it that become manifest. Though comprehending an army of hunt-

ers at one time, a perception of them would be *concrete* and *particular*, as being short of *universal*. The whole scope of the brute seems to be, as to its mind, the perception of the concrete; as to its will, submission to senses and passions, which sway it without any free election or moral dominion; and as to its acts, blind obedience to that will necessitated by appetite, love, hatred, passion and habit. No intellectual faculty or spiritual essence is proved to be absolutely necessary to explain brute mental phenomena, even if the mystery of them seem to persuade us to the supposition of spirituality. The truth of this assertion appears very clear when we reflect upon the wondrous mechanical, chemical, vital and solar discoveries of modern days. The infinitesimal fineness of chemical atoms and their diverse powers of attraction and repulsion; the effect of diverse vibrations of components of light; the mysteries of sound, heat, electricity, magnetism and materia medica, with still subtler animal sympathies; all go to prove that there may be animal powers and sensibilities much more recondite and refined, sufficient perhaps to explain the brute mind to an adequate intelligence, without recourse to the supposition of any spiritual essence whatever.

There is a metaphysical principle, which I have already enunciated, and which should here apply, viz.: that *acts and natures are concordant with, and limit, each other*. This requires that the brute, whose acts are *particular*, *concrete* and principally *organic*, should

have a nature principally material and organic, to accord with them. The human mind reflects, the brute does not. The first is active, the latter passive. Both passively receive an impression; one passively allows it to go to its term, to work its way to the end through passions and habits, because it only transmits what it receives; the other, by reflex action, turns upon it, arrests it, modifies it or sends it on to its term, as it elects. Reflection is peculiar to man, and through his acts we will determine his powers and his nature, which correspond with them. We know that, in common with brutes, he is material and organic; but he performs certain acts entirely disproportionate to matter and organism, and which are entirely different from results of any known or possible material function. They are in a different order, and one of them is *reflection.* Let us for a moment examine this.

To reflect is to commence a new act, not to continue one act. It is second to a primary. True it is that an act may rebound and take a new direction, but it must be sent by something. This something is a determining principle, which may arrest, modify or deflect, according to its nature, and it is the *efficient cause* of an effect produced. In man it is the exercise of intelligence and free will, commencing after the primary act is expended. The human thinking subject is therefore both passive and initiating action. It has a permanent potentiality; is a permanent *cause* either actually or potentially, capable of translation to *effects* of its own producing. Consequently it is not a

mode of something, but is something in itself, a principle, with powers, attributes and modes of its own. It is, in short, a *substance* and a principle of action, which means a *spirit.*

We have, through one of his simplest and most frequent acts, arrived at an incomplete idea of the nature of the mental man, and shall reserve the critical treatment of this subject until we can study it in connection with the human faculties and more complex mental acts. It is well, however, to take a look at where we stand. In determining the human thinking soul to be a *substance* and a principle of action, we hold the solid ground between *materialists*, who regard it as organic matter, and *skeptics* who doubt its reality entirely as they doubt the reality of all things which they do not deem proved *a priori*, even the reality of self-existence.

Thus far we have treated only *ideas*, the simplest element of Logic, yet have we seen how inadequate is common language to express clearly all that we conceive of them. How then can it express more complex mental acts and the fine distinctions and deep thoughts of advanced Philosophy? To aid in this the Schoolmen introduced into mental science new words for Philosophy only, and old words with new conventional meanings. These are technicalities, and, by familiarity with them, our understandings are sustained above the level of common language made for plainer things. In metaphysics, which is wholly intellectual, our senses, sensible experiences and sen-

sible tendencies confuse us and make it hard to take home to us truths which we cannot, in some way, feel. It does not seem to be enough to exclude rational doubt from the result of our reasonings, but, in our weakness we must needs yield to sensible hesitancy and yearn to see and feel intellectually the truth which we intellectually know. This refusal to accept boldly, in spite of prejudice and habit, the truth from which the intellect has sifted all rational doubt, punishes by provoking doubt itself to become a habit of the mind; and the lower nature asserts itself over the superior. This is the explanation of most skepticism; and it should be remembered that too much belief is not more irrational than too much doubt, and the nature which nurses it is certainly not so low as that which nurses the opposite.

Among the scholastic terms introduced to distinguish things are *material* and *formal*, and they are applicable to *ideas*. The first is that which, being outside, has its representation in the mind; the latter is that representation according to how it is conceived by the mind. Thus, ivory is *materially* what its qualities manifest it to be; a thing white, solid, heavy, hard, &c. It is *formally* precisely what it means according to the meaning actually had. It is according to the conception. In the mind of a carver it is statuary substance of a certain quality; in the mind of a brush-maker it is brush-handle substance; in the mind of a chemist it is a certain chemical compound;

in the mind of a naturalist it is a weapon of offence and defence; and so on.

Having explained the meaning of ideas as *concrete* and *abstract*, *objective* and *subjective*, *particular* and *universal*, *sensible* and *intelligible*, *complete* and *incomplete*, *material* and *formal;* I will revert once more to the distinction between *particular* and *universal.* This is done, first, to insist on a most thorough knowledge of the distinction as holding the highest importance in Logic, since any confusion here leads to dire and numberless errors; and secondly, as leading directly to the path which we have to take in further progress in Logic. Bearing in mind the inadequacy of language to express the precisions of the mind, we must be always on the lookout for precise sense, in order to find truth and avoid error. In reasoning it is a common fault to express the same idea at one time in an universal sense and at another in a particular sense; and this is frequent even without change of words, thus: *the Americans live west of the Atlantic;* and, *the Americans introduced the electric telegraph.* The same word is used in both universal and particular senses; and this confusion of the two, or of one particular with another, is the most frequent source of error. It is therefore a logician's place to sift well the sense, to reject the ambiguous and irrelevant, and lay bare the clear and naked point of sense. All else is confusion and error. You will now learn that the distinction which we have so much insisted on leads us

to the conception of what is *genus*, *species* and *definition*.

It has been said that the *universal* idea embraces all existing and possible individuals of any series that have certain qualities in common. It is generic. That is, all comprehended in it constitute a *genus*. *Genus* however is a relative term, relative to *species*, which are divisions of it. The two terms are relative to each other. This is because many universal ideas can be had as specific ideas or as generic ideas; and that some can have certain properties in common which associate them in a higher universal idea. This is the containing of *species* in the superior *genus*.

The standard idea is the *specific*, and it contains all those attributes of a thing by which it is conceived to be what it is, and without which the thing could not be adequately conceived. Thus, man's distinguishing attributes by which he is conceived are *animality* and *rationality*; and *rational animal*, man, is a *species* under the *genus animal*. If you specify animal by considering its essential attributes of *vitality*, *sensibility* and *mobility*, you make it a *species* under the *generic* term of *living things* which comprises also the vegetable *species*. *Genus* is broader than *species*, simpler by having fewer attributes, but having greater *extension* of numbers. *Species* is narrower than *genus* by being more restricted in *extension*, but more complex in the *comprehension* of attributes. *Extension* is said of numbers of individuals; and *comprehension* is

said of numbers of attributes. Where there is more of one there is less of the other; *extension* and *comprehension* are in inverse ratio.

There is always a difference that distinguishes the different *species* under one *genus* from each other, and this is called the *differentia ultima*, or *final difference*, or *specific difference*. We will take, for example, the *genus animal*, which has, as *species* under it, the rational and the irrational animals; and *rational* and *irrational* are *specific differences*. This explanation will inform you at once what constitutes a scientific definition.

DEFINITION AND DIVISION.

A definition is designed to so describe a thing that nothing else can be mistaken for it; and this is done by adducing always the nearest *genus* to the thing to be defined and qualifying it by the thing's own *specific difference*. Thus the nearest *genus* to be found to *man* (if you wish to define him) would be either *animal* or *rational being;* in either of which cases you would qualify by the other term as a *specific difference*, and you would define *man* as a *rational animal*. If we go up the ladder of *genera* we shall find that *animal* is a species of *living things;* these a species of *bodies;* these a species of *created things;* and these in fine a species of *being*, which is the transcendental idea, containing in *extension* everything, and in *comprehension* only one thing, existence.

You will gather from what is said that a scientific

definition differs entirely from an explanation or a description. A thing may be explained or described for a long time without having a true definition upon which scholars can reason; and I cannot too strongly urge you to attain to the precision of mind and generalizing powers that will enable you to go forth at any time into the broad domain of existences, take an expansive view of the numberless *genera* that lie there enfolding their *species;* with an eye that marks every differential tint, and defines every boundary as sharply as the lines upon a map. Truth is always single, and obscurity lies only in that which envelops it; it is always clear, but only to a mind capable of perceiving it.

The *transcendental* can never be *specific*, since there is nothing above it of which it can be a part. As it contains but one idea—existence,—and can be predicated of all things, it has no *nearest genus* to include it, and is beyond definition. Its idea is perfectly *simple*, like the idea of *one*. Thus do we have a *simple* idea at each end of the category of existences—*one* and *all*,—and they are incapable of definition.

I have said that *species* comprehends essential attributes; and you must distinguish between *essentials* and *integrals*, since things cannot be specified by these. Animal, for instance, cannot be specified by head, arms, legs or other integral parts, which may, or may not, be wanting; but by life, sensibility and motion, which, being essential, cannot be wanting. A definitive de-

scription regards only the *comprehension* of a thing, not its *extension;* enumerates attributes, not individuals; and in this it is just the opposite of *division*, which enumerates individuals and not attributes.

The method of defining given above is by collocating words which determine the thing defined, without showing the generation of its idea. Definitions, according to it, are synthetic, and are styled *nominal.* A definition affording the generation of the idea is called *genetic* or *real.* If I should say, *man is a rational animal* I find united by mental synthesis, the nearest *genus* and *specific difference*, the components; and I fully understand the *nominal* definition only by analysis—that is going from the *words* to the component *ideas.* If, however, I commence a description of *man* by beginning with the elementary *ideas;* and proceed, by showing the generation of the complex idea, from the *ideas* to the *words*, I make a *genetic definition.* The process would be as follows. An animal is an extended body endowed with life, sense and motion; most of such being incapable of forming judgments and deducing a judgment from the agreement of two others; which latter is a rational act. Some, however, are shown to be capable of such acts, and are rational animals—all of which are human, mankind, or *man.*

Genetic definitions are analytic, proceeding from the known ideas to the unknown or not understood word to be defined; whereas nominal definitions are synthetic, proceeding from the unknown word to

known ideas which compose it. The analytic method in science commences with the known, and progresses, by decomposition, to the genesis of other ideas; the synthetic commences with nominal definitions, progresses to axioms which are self-evident truths, and thence to theorems which require demonstration. In this manner it constructs knowledge upon knowledge without limit, save that determined by the nature of the human faculties. Euclid's geometry is according to strict synthesis; and the study of anatomy is according to strict analysis.

There are certain rules to be observed in defining, which are founded on the nature of things. A definition must be clearer to the mind than the thing defined; it must not be more, nor less, extensive, nor must it be negative. The reasons for the first two are patent, and that for the last is based upon the fact that from what a thing is *not* you can only gather what it *is* by *exclusion*, not by *definition*.

Things are either substances, existing in themselves, or are qualities, inhering in something else, and their definitions must correspond; definitions of substances being according to themselves, and those of qualities being according to the substances in which these inhere. Color is a *quality*, and is defined *a quality of visible bodies, by which they decompose light, and reflect one or more of its component rays.*

Substance, Attribute, Accident, Quality.

I have several times introduced *substance*, *attribute*

and *accident*, and think it well to here explain more precisely what I mean, although these terms will be more fully developed hereafter. *Substance* is that which has an independent existence of its own, and does not suppose the existence of something else, of which it is a quality or mode. Schoolmen define it "id quod in se subsistit," what exists in itself. In this it differs from both *attributes* and *accidents*, which require something in which to inhere. These two differ in this, that *attributes* are according to the natures of things, and necessarily result from their constitutions or essences; as *reason* in man, *life* in animals, *liberty* in a moral being; whilst *accidents* may, or may not, belong to their particular subjects; and are without regard to the essences of their subjects, any further than merely being in conformity with them; as *nationality* in a man, or *whiteness* in a horse. *Attributes* and *accidents* are both *qualities* of things.

It was said that *division* differs from *definition* by enumerating individuals, and not attributes; and the object of *division* is to divide a subject into its individual components, to avoid confusion from too many thoughts about its different parts at the same time. It is *real* and *logical* as contra-distinguished; or *essential* and *integral* as contra-distinguished. If, for example, you divide *man* as a subject *really* you enumerate the real, substantial divisions of his nature; as body and soul: if *logically*, according to logical divisions of *genus* and *species;* or other purely mental conceptions. If you divide the same subject *essentially*, you enume-

rate the essential parts, without which the subject cannot be conceived; as *soul* and *body:* if *integrally*, the material and natural parts; as *feet, hands, face*, &c.

Division should be full and complete, embracing all the parts and no more. No one part must include another, and no one be equal in extent to the whole subject. The subject should be divided according to the order of nearness—the nearest first; as substance into corporeal and incorporeal; corporeal into organic and inorganic; organic into vegetable and animal; animal into irrational and rational; and irrational into insect, bird, lizard, quadruped, mammal, &c.

This treatment of the subject *ideas* has been longer than was intended, but the importance of having it well understood, in order to gain a fair knowledge of Logic, could not be overlooked; and a second reading of it is recommended before going further.

JUDGMENT.

We shall now consider the mental operation which is second in order towards reasoning. This is *judgment;* and the formation of it is so often true and so often false that differences in *judgment* always did, and always will, divide mankind. To learn its nature, therefore, and the process by which it is formed, cannot be other than a very interesting investigation; first, in the cause of truth, and, secondly, in that of scientific progress.

Judgment is defined "an act of the mind by which it apprehends several ideas as agreeing or disagreeing." From this you will know that *judgment* requires at least three perceptions: a distinct one of each of the component terms, and another of the relationship affirmed or denied between them. *Judgment* is an act of reflection; it is deliberate; and therefore a mere concrete perception of a thing and its modes is not a *judgment.* If you see a man walking, and do not, by attention, distinguish the separate ideas of *man* and *walking*, you do not form a *judgment* in the matter. To form this you must not only perceive separately the ideas, but must unite or disunite them in your mind by a separate mental act which affirms or denies some relationship between them. If no relationship be perceived, although it exist, no *judgment* is formed. It is clear, then, that a comparing of ideas and a per-

ception of relation; of agreement or disagreement; subsisting between them, are both necessary to the formation of *judgment;* and that the perception of that relation is really the reason why the mind acts in uniting or disuniting the ideas. Perception of relations, then, is a moving power upon the mind towards further action, and is properly termed *the motive of judgment.* Logicians call the motive of judgment *evidence*, and this very interesting subject we shall reach in a short time.

The *subject* of a judgment is that about which something is affirmed or denied, and the *predicate* of a judgment is that which is affirmed or denied of the *subject.* In the judgment *John loves James*, *John* is the *subject* and the *loving of James* is the *predicate.* The *subject* and *predicate*, regarded without the link, are the *material of judgment*—the link is the *form.* Thus, in the judgment *John loves James*, John and the loving of James are the *material*, and by themselves they contain no knowledge—they mean nothing; but the link which effects meaning, and affirms the loving, is the *form.* It is merely the construction of language which disguises the *formality* that John *is* loving James. The *form*, then, is in the affirmation or denial of the union of terms, and is contained in the expressions *is* or *is not.* All the rest is material terms.

From this it follows that a judgment may be *simple*, with only one subject and one predicate; or *complex*, by having complex subject or predicate. Both of

these may be very long and contain many ideas, making a very complex judgment, of which the terms are united or separated by *is* or *is not*. Any thing or things said about the *subject*, which can be affirmed or denied by one act of the mind, is the *predicate*. The whole of the first paragraph of the Declaration of American Independence, in which the duty of a revolting colony to make known to mankind its reasons for revolt is affirmed, constitutes one *judgment* through the synthetic unity of thought in that affirmation. Comparison, embracing all the ideas simultaneously, forms an union of them, out of which comes the mental unity of the act of *judgment*. It affords the *criterion* or *rule* by which the mind discriminates or discerns whether it should affirm or deny; and that discerning moves it to one thing or the other—thus becoming the motive of the final mental act.

Evidence.

Direct evidence is the perception of relations; *indirect evidence* is the knowledge of them through the authority of other men, or other authority which may be natural or supernatural. We have no knowledge whatever but what is derived from *evidence*, direct or indirect.

Evidence is properly called the ultimate criterion of truth subjective, or certainty; because, in last analysis it is by *evidence* that we judge. The last criterion cannot require demonstration, or it would not be really the last; neither can it be extrinsic to the mind be-

cause this would have to be tested by the internal principle, and it would not be last or ultimate. Subjective evidence is that which finally determines after objective evidence has been sifted.

The last and nearest evidence in the mind, to move it to judgment, is *consciousness* of a fact. By *fact* I mean philosophically whatever is and is made manifest to the mind. This proposition requires your strictest attention and understanding; for *consciousness* is a faculty; the revealer of all other faculties; the revealer of *self* to *self;* and the revealer to *self*, in last analysis, of every evidence and every knowledge. It reveals to you your self-existence and all its modifications; and it is by it that you know yourself to be different from every other *self;* and by its evidence you know your possession of every other evidence whatever. You never form a judgment that you do not exercise your faculty of *consciousness.* The schoolmen call it the *sensus intimus*, or inmost sense, because it is analogous to *feeling*, and feels, as it were, the reality of what is presented immediately to the soul. It makes known to the soul its existence, its unity, its identity, its particular ever-varying conditions; and, by reflection, the reality of its faculties and the reality of each particular evidence; whether this be of the senses, authority, memory or reason.

Self-consciousness is a primary fact made known to us, through the self-sufficiency of God's infinite mind participated by us sufficiently to afford us fundamental certainty. It cannot be demonstrated and cannot be

denied. Being self-evident, it is, like other self-evident facts, such as thinking, feeling, incapable of being proved; since all are out of the bounds of reasoning, not in the sphere of its operations.

To deny *consciousness* is to deny everything, because it is universally the ultimate motive of *judgment*, the evidence of all other evidences whatever; since all other evidences are perceptions of relations, and all perceptions are revealed proximately by consciousness.

We have now seen this faculty under two aspects, under one revealing *immediately* the particular conditions of self; under the other revealing *mediately*, that is, through the medium of other evidences, other facts. These mediate evidences are those of external sense, memory, induction, reason, testimony and authority. We shall now proceed to the examination of these different species of *evidence*, and in so doing we shall be really examining all the sources of human knowledge. The importance therefore of attentively and critically studying them I need not impress upon you.

The external senses and memory are already reasonably well understood by you, perhaps sufficiently so for their logical functions. They are two of the elementary faculties, and will be more fully treated, as regards their natures, in Metaphysics. What we wish to understand in Logic is, not so much their natures, as their sufficiency or insufficiency to afford indubitable

proof; in other words, their functions in reaching truth and aiding in the process of right reasoning.

When the senses are normal and not deceived themselves, they do not, in their proper sphere, deceive us; affording under proper circumstances certainty in natural and physical things. Their order is only the natural and physical, not the real or the supernatural. In these they are entirely out of order, the *real* being in the order of intellect, and the *supernatural* in the order of authority. At the baptism of Christ, the Holy Spirit was present under visible form, but the eyes beheld only a dove. In investigating its nature they were out of their sphere. Again, when Christ appeared after his resurrection in a supernatural body which could pass through closed doors, the eyes saw the appearances of a natural body and the hand of Thomas felt the appearances of a natural body. To the senses all that appeared natural was phenomenal; what was real they could take no cognizance of.

These instances are given only in illustration. It is not the province of Logic to investigate the mysteries of another science, only to show that those of the sciences of Theology or Metaphysics are beyond the reach of the senses of man. It is not necessary to recur to Theology to mystify our senses; for all the realities of Metaphysics, many of which are clear to the intellect, are unrevealed to sense. The physical order alone is apparent to external senses, and it comprises only qualities, not realities, of material things; such as color, weight, hardness, form, taste,

smell, sound, &c. The senses may report on these, but not on the realities in which these inhere. They are means to all physical knowledge, but immediately to no metaphysical knowledge whatever. The intellect only, through its powers of abstracting and generalizing, is a means to the latter.

The Almighty is provident and economical in the highest degree, and has provided us with sufficient physical senses for physical well-being or pleasure, and for physical safe-guards against physical danger from without or within. Their daily warnings in this line can scarce be counted. This is in the order of his *providence*. In his *economy* he has confined these senses to a special sphere and not designed them to operate in a higher sphere for which he expressly created the intellectual faculties. If then any one, ignoring this order of God, looks to his senses for evidence in intellectual things; or to his intellect for evidence in sensible things; he reverses the order and reaches only error. A man born blind cannot reach the ideas of colors by intellect; nor a man born deaf reach the ideas of sounds and harmony by the intellect; and the rule will apply to all the other senses. In like manner a man born idiotic will not reach true reasoning by any or all the senses, no matter how perfect he may have them. A misunderstanding of the system of God is not an uncommon source of error, by which the mind affirms that which is not, and denies that which is. Many atheists will not receive God and His grace intellectually because

they cannot *sensibly*. They are simply out of order. God is not revealable by the evidence of senses, which fail to know him; just as dark objects at night are not revealable by the evidence of sight. There is no failure of dark objects, only failure of vision.

The external senses afford infallible testimony only when acting within their proper sphere, that sphere determined by reason. We have seen that the supernatural is out of their sphere; likewise the pure intelligible; but the sphere in which they afford infallible testimony is far more restricted still. It occupies but a small spot even in the order of the sensible. The most perfect eye cannot distinguish one human face from another at a mile's distance. The hearing, the taste, the smell, the feeling, are all frequently confused, deceived; but the sensation such as it is, correct or wrong, is truthfully conveyed to the interior by normal senses. A sore finger may not distinguish hardness from softness, roughness from smoothness, warmth from coldness; an eye may be color-blind, not distinguishing several colors from each other; but the supplanting and spurious sensations are imposed upon the nervous system somewhere between the foreign body and the sensorium, and are faithfully delivered to the latter.

The senses must be subordinate to reason or they give but unreliable evidence. In a natural life there are certain distances inside of which we are ordinarily liable to natural dangers; and certain minute dis-

tances outside of which only we are so liable. Providence has provided us with sufficient *sensible* faculties to operate within these limits, for our natural protection (to say nothing of rational enjoyment); and these limits about circumscribe the sphere of certainty in *sensible* evidence. There are factitious dangers, however, but not natural ones, which are ordinarily liable to threaten us from beyond either extreme; as the tongue may be touched by poison, whose action is near, without distinguishing it; and the body may be struck by a ball from the distance of several miles. Reason must then admonish us as to when we can trust the evidence of senses; it is the higher evidence, and *sense* is subordinate to it.

All the senses are capable of affording certainty when employed according to the design of their author and within the limits fixed by him. When this limit is approached, their evidence becomes uncertain and must be fortified by the higher one of reason before we trust it. This leads us to reflect that our mere physical existence is not the great object in view in the mind of the Creator; for it appears from the fact that the domain of the senses' certainty is nearly co-extensive with their importance in self preservation; no greater. There is a realm beyond them which he has in view. Distance beyond the threat of ordinary natural dangers to us renders the eye and ear uncertain; and distance too small, makes them equally uncertain: the telescope, the microscope, chemical analysis or reason, must compensate. The extremes of

these distances are astronomical and chemical; the mean and true distance for certainty is about where the efficiency of the senses in self-preservation would place it. The system of God extends to all our faculties. A limit proportionate to their functions in constituting man to be what he is, is placed upon all, and outside of that limit all is uncertain; for the faculties are there out of order. How everything, exterior and interior, remotest and nearest, confirms the natural knowledge that all is systemized by one author! All the physical and all the mental sciences are parts of one universal science; and no two things outside of creatures' free creations conflict. All else is order, and only our free will acting irrationally makes disorder.

What *memory* distinctly presents with circumstances and time is true and certain evidence. The evidence is in the distinctness. What is indistinct is nothing at all, for it is a failure of a memorial attempt. An appeal from memory indistinct, to memory distinct, is like that "from Philip drunk to Philip sober." In each case the appeal is from one thing to another thing.

The evidence of *memory* depends entirely upon its distinctness as regards circumstances. If time, place and surroundings are perfectly distinct in the mind, their recognition as being true repetitions of the past can be relied upon with certainty. If these are not perfectly distinct there is no failure of memorial re-

cognition; only the failure of distinct ideas to be recognized. This will be more perfectly understood after studying the faculty of *memory* in Metaphysics.

The next evidence moving to judgment is that of *induction*, and its study is one of the most interesting in all Philosophy. It is by inductive evidence that the wonderful progress of physical sciences in modern times has been attained; and it is by false induction that physical science is constantly running into error. Induction is the basis of what we call *scientific speculation;* which may be true or false; and is itself, as a principle of truth, based upon our acknowledgment that design and law underlie the universe.

Whilst a law and its application are as yet unascertained by any other means *inductive* evidence of facts may be had; but as soon as they are otherwise established *induction* ceases, because they are no longer supposed, but ascertained; and *deduction* is had. Like sense and memory induction is subordinate to reason, and its evidence is not of the strongest kind, because not direct. When properly founded, induction affords certainty. It reasons out a law covering universally, and places particulars under that law; from which you will know that the strength of its evidence differs in different men and is according to the reasoning which places the law.

All this will be very plain to you from the received definition of *induction*, viz.: "that process by which the mind, comparing together certain particular facts,

rises from the knowledge of particular to that of general;" as when, from the knowledge that all the particular dogs that you have seen bark, you infer that all dogs bark. To induct and to infer; induction and inference, mean the same. From the uniformity of particulars you reason that there is a law, and you may reason correctly or incorrectly in the matter. If you were to watch the steamships leaving the Mersey, crowded with people going to America, and should infer that all the people of Europe are going to America, you would have a false *induction;* but if you were to discern that they are emigrating according to a law of humanity; were to ascertain the application of the law, and should infer that emigration will continue according to that law, you would have a true *induction.* The essence of it, then, is *law and its application discerned.* From this you will understand that when we apply the law of *cause and effect,* and infer the existence of God from His physical laws, whilst atheists fail to do so; we do not differ as to the existence of law, but as to the nature of it; they making it consist in mere blind, unreasoned uniformity of particulars; whilst we know it to be the enactment of an intelligent and efficient first cause. From the past you can know the law that will govern the future before the particulars of the future exist, and can so reach the law-giver; but only by your knowledge that intelligent order is the rule everywhere. This is the only link binding knowledge of the past to law operative in the future; and all men, whosoever

they be, possess this link, recognizing the reign of law and intelligent order throughout the Universe. All acknowledge that *like causes produce like effects under like circumstances*, and never an exception. This is an *a priori* truth, and leads to much induction; and if men who profess atheism would reflect that *uniformity of particulars*, past, present and to be, means *uniformity of effects*, they would have to abandon their professions or their logic.

There are, however, inductive truths that do not reach us from *a priori* principles, but from a constant uniformity, in the aggregate, of particulars in themselves variable and varying; the knowledge of which uniformity is induced invincibly into every man, atheist or not; and if he were not satisfied that there is an intelligent Providence sustaining natural laws, he would not have it. Thus is the atheist bound on either hand. Would he build a mill upon a stream unless he knew that, in the future, the uncertain winds would certainly blow to him and bring water to the stream's bed to replace what is flowing away? Would he sow his seed upon the soil, unless he knew that the rain and the heat and the dryness were so ordered that he would be able to harvest? He may say that the wind is a constant force, but we know that in most latitudes most winds are not constant either in force, time or direction; and that clouds are not constant, in moisture or in the meeting of cooler winds to condense and precipitate it. The particulars cannot be counted upon; yet their results, in so far as they constitute a part of the

order of nature, can be counted upon as within the design of the Author of that order. All men base calculations upon, and have a certainty of, the continuation of the human race and certain other animal and vegetable races; knowing that, no matter what particulars fail, the general will not. This is the knowledge of a law which cannot be blind force, and we prove that there is no such thing as a law of blind force as follows:—

1st. There is a law, as we have seen, acknowledged by all.

2d. Particulars may, and do continually, fail; and any one may fail as well as another.

3d. Since each particular, one and all, *seriatim*, could and might fail under blind law; the actual failure of all would prove that there is no blind law or any law.

4th. Nothing less than the preventive power of the Author of order could so far stay the failure as to give the stay the force of real law.

5th. There always has been, is now, and will continue to be, a stay of failure, which is acknowledged.

Therefore there is a law which is not blind force, and it must be from an intelligent source.

The subjects, however, of this law are only actions which flow from the nature of things, spontaneously, not actions of free will; in man only his spontaneous modifications, not the modes that the race may assume in different phases of society, government, commerce, education or religion. The modes of brutes are

according to fixed laws, but not some modes of man; showing the exceptions to be owing to the exercise of free will. Inductive evidence leads us to the knowledge of intelligence, design and law in the order of nature; that is, the knowledge of God; also to the knowledge of free will in man. All the particulars that can be counted will not evidence a law, or prove an uniform sequence to be a law, unless the supposition of intelligent design be of its essence. Free acts prove free nature; acts of design designing nature somewhere. Coördinative acts throughout the material universe prove coördinative nature either in it or in its cause; and since such nature cannot be other than intelligent the intelligence must be in the cause. The principle that acts and natures gauge each other is one never to be overlooked in Philosophy.

I have said that the whole essence of induction lies in law; and Lord Bacon, frequently styled "the father of modern Philosophy," because he gave the greatest impulse to inductive reasoning, and so changed in a measure the current of philosophic investigation, discovered nothing new. Men had known law and practised *induction* from time immemorial, and we all do it frequently every day. You scarcely ever look about you without inductive reasoning. As you walk along the street, you see, not a row of houses, but a row of walls, windows, doors, &c., all so ordered that you see design and law, affording inductive evidence that behind the row of walls are systems of compartments, floors and chimneys; in short, houses.

Again, you see men excavating a cellar; you rise from the particular to the general by your discerning that cellars are intended for houses; and you infer that in the future a house will be built there. You see system; and, by evidence as strong as the evidence of eyes, you see designing man as plainly as though he were before you, instead of his design.

So is it with the workings of nature. The seasons succeed each other every year, and we know that "every year" is the order in the future as in the past. The motion of the earth in its orbit, in union with its pole's inclination to the plane of the ecliptic, is the cause of the seasons; and I see in them original design and the Designer. Without them there would be no change of seasons, temperature or winds; no rain, no springs, no streams nor rivers on the land; only desert and death. The rain would fall from great heights into the ocean whence it came, obedient to blind force, instead of filling the land with life, obedient to design. Mothers have always cared for their offspring, and they will continue to do so. Seeds have always sprouted, grown and reproduced their kind, and so will they continue. The designed laws of nature with which we are familiar are without number, and *any one would prove God;* yet the atheist perverts his judgment by his will and stultifies himself by denying intelligent design in nature, whilst his whole life is a series of acts based on the certainty that there has been design and law; that the same exist, and that they will continue to exist to sustain

the future. The only excuse that he has to give is the whining assertion that things are so constituted, not ordered. He has not reflected that "constituted" is a physical participle like "ordered," not a metaphysical one; that there is no *constituted* without a *constitutor;* and his reply is without shape, meaning or semblance of proof; without any *raison d'être*, which everything that is has, outside of the vagaries and absurdities of man's free will.

The next evidence moving to judgment is that of *reason*, by which conclusions are drawn from premises. Reason is a *fact* patent to the intellect, and that it affords certainty is a primitive truth; yet there are philosophers who deny this and who endeavor to prove, *by the certainty of reason, that reason affords no certainty.* They certainly prove, by false reasoning, that false reasoning affords no certainty in conclusion. There is a paradox for the entertainment of students of Logic. Such philosophers argue by granting (in reasoning at all) all that we ask. The certainty of reason is reducible to the fact that the conclusion arrived at is identical with the premises, inasmuch as it is contained in them, and they contain nothing else. This establishes a complete identity in sense, if not in words, although the premises contain three ideas besides the *nexus*, whilst the conclusion contains but two. It is, however, the sense of the judgment that we deal with, not words. *The principle of identity* is that by which we know all mathematical equations—such as 2 and 2 are 4; 5 times 6 are 30, &c., and by

which we know generally that whatever is, *is*. The consideration of *identical* propositions we shall reach in a short time.

The next evidences moving to judgment are *authority* and the *testimony of men*. These two terms are not identical, for there may be *testimony of men* without *authority*. By the evidence of *authority* I mean the evidence, on his *ipse dixit*, of one authorized to speak, whether by his recognized jurisdiction or by delegation from a higher positive authority. A child accepts information on the authority of a parent, not because the parent may be a man to be trusted, but because it regards the source of information as superior, by right, to its own judgment. If you regard a man as an apostle, a prophet; or in any way inspired, delegated, or guided, by God, you accept, on his word, the evidence of his authority; not because you trust his natural powers, but the delegated authority which you believe him to hold. This is quite different from the testimony of men, based upon laws common to the human race, and which we shall now consider.

That the testimony of men affords us certain evidence, does not seem to need proof, as it is a *fact* manifest to the mind by experience. Every person is certain of things of which he has no knowledge except from the testimony of others. He knows them to be facts. We all know the existence of such cities as New York and Liverpool, and that ships sail regularly between them; and our subjective certainty is not affected by whether we have seen them

or not. We know as well the prominent facts of history: the Grecian republic, the Roman empire, the Crusades, Demosthenes, Cicero, Charlemagne, St. Austin, Henry VIII., and a host of historical events; and we no more doubt these than we doubt the reality of what we see. The reason is that this species of evidence, being on the testimony of others, is based on the normal exercise of men's mental and moral faculties; that is, it is according to the laws of man's being. Because the exercise is normal, it is according to law; and because it is of the faculties, it is said to afford *moral certainty*. This, therefore, is based mediately on law, and is referred to the Creator and Designer of man's faculties, in final reference.

If human testimony could not afford both subjective and objective certainty, the system of which man forms a part would be incomplete.

It is a common thing to hear men, and even philosophers, talk of *more or less certainty*, as though *certainty* were a compound divisible and had degrees of *more or less*. *Certainty* must not be confused with *belief;* both consist in the adhesion of the mind to a knowledgeable object; the former perfectly, the latter imperfectly. Subjective certainty is a condition of the mind excluding all doubt and fear of doubt; the less perfect *belief* does not exclude fear of doubt. When I say *belief* I mean it in a philosophical sense, not in the theological sense of *faith*. If there be a condition of the mind which does not exclude fear of doubt, it does not conform to *certainty;* and the

failure is not in the condition of mind, but in the *evidence* which fails to move judgment as far as *certainty*.

The fault which many philosophers make is in attributing to *certainty* the variation which resides in the *evidence*, causing degrees of more or less strength in this; consequently, degrees in adhesion of mind to object. Every evidence moves to a judgment of subjective certainty or fails to do so; and it will accomplish in one mind what it may fail to accomplish in another. Its effect is according to the constitution, natural or other, of the particular mind; and in this the mind may be modified by habit and desire. The wish is often father to the mental condition. When the elements of evidence are apprehended as fixed, either in themselves or according to laws, a judgment of *certainty* should be effected; but when they are mutable, the evidence is weaker, and only *belief* stronger or weaker is likely to be generated. When man's free will enters the combination, a study is made as to whether it operates in the testimony according to fixed laws of humanity or according to appetites and passions; immutably or mutably. Even free will follows by necessity some fixed laws, since it cannot prevent man from loving his own good. The case is studied in the individual, and the particular man is measured. If appetites and passions are likely to rule, the elements are mutable; and the condition of the mind may vacillate, reach *persuasion*, or even *belief;* not *certainty*. If they are apprehended as quiescent, subdued, or in any way inoperative, the evi-

dence is stronger and the judgment higher towards *certainty*, perhaps reaching it. The judgment, however, may, or may not, conform to reality; it may be true or false whilst the mind is in a condition excluding doubt and the fear of doubt entirely. The more men unite together in testimony, the more do we apprehend them acting according to fixed laws of their being; the more uninfluenced by perverse will; therefore the greater the number the more fixed do we apprehend the elements of evidence to be. Thus do we see that a law of God underlies the certainty arising from the testimony of men. Most philosophers do not reach this conclusion, but are satisfied by reducing the testimony of men to the testimony of self, through judging of others by one's self. This, however, is not a principle, only a rule; and the rule even is less educed from the knowledge of self than from the knowledge of mankind. It can be educed from either and is confirmed by both.

In the pursuit of our subject of subjective certainty in judgment and of the characters of the different sorts of evidence leading to it, we saw that the nearest and final revealer of truth, that which presents immediately all truth, is *consciousness*. The external senses, memory and reason come next, as presenting their facts to consciousness. Induction, authority and testimony are more remote, as having their facts undergo the ordeal of reason before presentation. *Consciousness* is the basis of the whole structure of knowledge, and without it we would have no knowledge. Against this

true system some illogical men argue that the sole criterion of truth is what they call *common sense*, which is nothing else than the common consent of the mass of mankind. In this they argue in a *vicious circle*, for they pre-suppose the evidence of other faculties in reaching their fundamental truths; viz., the existence of the mass of mankind, and the fact that mankind have a common consent in knowledge. The evidence of the senses cannot prove the existence of men and then be proved in turn by the consent of those men. When we agree to receive as evidence the consent of men it is because our reason finds the wherefore, and not because the wherefore is placed in us by other men. The final motive is personal.

In the apprehension of those logicians who claim that there are degrees and qualities in *certainty* the degree is owing to strength of *evidence*, and the quality to sort of *evidence;* and they term *certainty* physical, moral or rational, accordingly as we have it from senses, testimony of men, or reason. We have seen, however, that there is but one *certainty*, which consists in adhesion of mind to object with exclusion of doubt and fear of it; there is, however, physical, moral and rational *evidence* according to sense, testimony or reason.

When we attain to a knowledge we naturally love to repose at ease and without effort in the evidence which affords it; and that commonly first sought by man is physical evidence. This is connatural with our lower nature, being the evidence of the senses;

the lowest, and often the weakest, evidence; sometimes requiring the confirmation of *testimony* or *reason*. In it intellect has no part, and the lowest type of man can lie and doze in it.

The next is that of *memory*, which is neither sense nor intellect, but more analogous to sense, as it is partly organic.

The next are those of *induction* and *testimony*, which are only partly rational, since they are also partly of memory and partly of sense.

The above are the evidences with which the common mind is most familiar and with which it is most connatural.

A much higher evidence is that of *intellect;* and of the intellectual what is immediately *perceived* is more easily assimilated by man than what is *reasoned. A priori* truths, which are axioms; *identical* judgments, in which subject and predicate are identical; like all mathematical judgments; *necessary* judgments, in which subject and predicate agree from intrinsic necessity, and which that necessity makes universal and eternal; are all frequently *immediate* perceptions.

Higher and nobler than all is the evidence of pure deductive *reason* in reasoning; which is a perception of truth illated from other truths; which may be, in their turn, illations from further truths; and so on; climbing, step by step, to difficult heights; where, though the basis be firm and the support continuous, the height is giddy and uncomfortable to all, and only bearable to the bold, earnest and conscientious seeker

after truth. This explains why there are so many skeptics, and it explains all that there is of a wherefore for their doubts.

All the evidences thus far enumerated are natural. They are in the natural order of things. There is, however, an evidence of a higher order, the supernatural evidence of *faith*, in religion. Here Philosophy touches the revelations of Theology, and we must not cross the boundary. Yet, as they touch we may approach the point of contact and see, with philosophic eyes, the natural and the supernatural connect. We witness, by reason, the necessity for revelation, for the full development of man and society and for their natural welfare; and reason confesses its own deficiency, in the past and for the future. The whole mind finds at last a knowledgeable object in its Creator to which it, by knowledge, adheres with more firmness than to any other whatever. Whether there be supernatural elevation of the mind in the act of faith is for theologians to answer. It is enough for Philosophy to say that evidence in all supernatural truths is Divine veracity; and this is, to pure reason, the strongest of all evidences; taking hold of the minds of men, learned and unlearned, as a *fact* that cannot be demonstrated or contravened. We must pause here.

It is appropriate however, here, where Philosophy has conducted us to its bounds, to make one solid reflection as a fruit borne by the tree of knowledge that has grown up before us. We have seen some of

man's powers and limitations spread out before us; and we can better understand how appetites, passions, free will governing the direction of mind, and limitation of powers by nature, divide mankind on subjects and interests from lowest to highest, from the smallest temporal to the greatest eternal. These explain why men, with the same facts and data and the same specific powers of reason, arrive at conclusions so wide apart; and it is rational to say that, if we were all as earnest in understanding the entire charge of God to men as many are diligent in misinterpreting it; as honest in seeking his intent as many are acute in making it conform to their wishes; as intelligent in it as many are self-deceived in it: as much in love with distinct truth as many are with indistinct vagaries; with the offspring of God's mind as many are with that of their own; with learning as many are with teaching; with simple reality as many are with complex fancies and conceits; the world would not be so divided in its creeds and its consequent acts, all which affect so deeply the inconceivably great interests that await us all in a very near hereafter. The fancies and imaginings of men are not premises from which conclusions in *reality* can be drawn; for, from the *ideal* to the *real* there is no logical illation.

In the common, sturdy mind, with matters whereto it knows itself able to reach, there is a true and distinct conception of the term *real*. Its derivation is from the Latin word *res*, a thing; and its true expression is that of actual condition on the part of the

objective thing, as distinguished from condition that is conceived in subjective intelligence. It would not seem important, upon first thought, to explain the meaning of this word; but when we see so frequently pseudo-scientists, philosophers and theologians, along with those who accept, without knowing better, their phraseology, making confusion with *real*, *ideal* and *fantastic;* it seems incumbent on those who undertake to teach exact science, whether mental or theological, to awake attention to the confusion, and to startle the minds of men with the knowledge that the forms they love and trust are their own creations, shadowy and unreal. When men are revered as teachers, whose habitual utterances, in most serious matters, are those of charming fancy, the imaginings of their hearers keep pace with, and often exaggerate, what pleases them; crowning creations with creations under which plain, valuable truth may lie buried for its plainness. It is wholesome to repeat that, from premises in the purely *ideal*, there can be no logical deduction of the real as a conclusion; and this truth may be applied with profit in estimating the worth of "progressive" theories regarding the supernatural system. The system is *real* and the theories *ideal*, and there is no probable conformity of them. Every one is apt to create for himself an image of the unknown of which he often thinks; but how often does the real, when known, prove to conform to the ideal? Not to distinguish between these, therefore, in small matters, is simply absurd; but not to do so

where the gravest and most permanent interests of man's immortality are concerned, is enough to make one tremble. The real supernatural system we cannot reach by means of our faculties, since we have none adapted to that purpose; and their functions should be those of subordination. When, however, we are satisfied that God has revealed, we have the strongest evidence of the truth of His revelations in the certainty of His veracity; and we have equal evidence (in His wisdom and His ability to adapt means to an end) that as much of the supernatural as He has superadded to our natural means is all-sufficient for His purpose; that it is enough with no superfluity; and that attempts of man to alter He can only regard as *lèse majesté, high treason*, to be jealously punished *according to His own conception of the sin*, not ours.

There is finally a species of *evidence* by which truth reveals itself without proof, from the intrinsic necessity in the mind to assert or deny the agreement of subject and predicate. These truths are *self-evident;* and of such are, *the whole is greater than the part: like causes produce like effects: things that are equal to the same are equal to one another*, &c. All *axioms* are self-evident.

If we dismissed here the subject of *intrinsic evidence*, it would be a very premature dismissal of one of the most profound and important parts of Logic. The question may be put: Can any truth hold the evidence of itself? Can it assert itself without begging the

question? Some logicians maintain that no truth is self-evident; and that position is as much the basis of serious error as is the denial of innate ideas.* The same necessity that was apparent to our Creator for innate ideas not derived from experience of sensation, that we might have universally the simplest generic elements of knowledge; was apparent also for us to have *a priori* truths in order to have a system of knowledge at all.

Before going further, I shall draw the distinction between two classes of judgments, whereby the understanding of the subject will be more clear. There are *judgments* in which the predicate is applied to the subject by way of addition of knowledge; that is, in which the affirmation or denial of the predicate adds to the extent of knowledge that was possessed in the simple possession of the subject. These are *synthetic* judgments. There are others in which the predicate is identical with the subject, and in the affirmation or denial of which no new knowledge is added. These are *analytic* or *identical* judgments. If I say *John loves James*, the affirmation of the predicate is by way of addition of knowledge, synthesis; but if I say that 2 and 2 are 4, there is no additional knowledge

* By *innate ideas* is not meant ideas born with a child and latent until the intellect matures; but ideas *derived from* the interior, the nature of the intellect when competent, and not from sensations, nor meditation upon sensations. The question of *innate ideas* is much misunderstood, and those who have read Locke upon it are requested to not prejudge it conclusively. It will be treated more at length in *Ideology*.

afforded in the predicate. The latter is *identical* with the subject. In the propositions given above, *whole* and *greater than part* are identical; also *equal to the same* and *equal to one another* are identical. All *a priori* judgments are identical; none of them *synthetic*. Kant affirms that some synthetic truths are *a priori*, and we shall find occasion hereafter to attempt the refutation of this theory. It would be in the province of Metaphysics, not Logic.

Immediately-perceived identical judgments cannot be proved; they are evidenced to us by consciousness without mediation of reason; and are necessary to the intellect as metaphysical principles to which accidental knowledges must be reduced in order to progress in science; for without *a priori* principles there is no reducing, classifying and correlating of accidentals.

Principle of Contradiction.

In the proposition affirmed above, *the whole is greater than the part*, the subject and predicate can be interchanged, thus: *what is greater than part is whole.* Here the subject is made predicate and the predicate subject, showing no synthesis, but entire identity; that it does not matter where they are placed, being (unlike those in synthesis) the same in sense. It is the same as to say, *that which is is*, and *that which is not is not; something is something* and *nothing is nothing;* identity. *Something* and *nothing* cannot be predicated of

the same thing at the same time. IT IS IMPOSSIBLE THAT A THING BE AND NOT BE AT THE SAME TIME. This proposition cannot be proved, but is self-evident, and is called by schoolmen *the principle of contradiction*, as it declares to be an universal and eternal principle the impossibility of contradiction in thought. The *principle of identity* is that by which we know simply that *that which is* IS.

From the fact that *a priori* truths are *identical*, it follows that they are *necessary;* that is, true by necessity, because the contrary cannot be. It follows also that they are *universal*, without exception; and that they are *eternal*, without regard to time or duration; and all are reducible to the *principle of contradiction. The shortest line between two points is a straight line*, is a necessary truth, since it cannot be both straight and deviating, and the mind rejects the latter.

All mathematical truths are reducible to the *principle of contradiction*, although by a process of reasoning; and no experience of senses is required for their demonstration when the data are given.

The fundamental moral principles are reducible to the same. If I should say that *man ought to obey God*, I announce a truth reducible to the principle of contradiction, and to identical terms, thus: between the infinite Creator and His rational and free creatures there must be relations that necessitate law binding always upon all; therefore man is subject to the law of God. *The subject is bound to obey the law*, is an identical proposition; and that *he cannot be subject to*

it and not subject to it, is according to the principle of contradiction.

Judgment is in a great measure directed and controlled by will, which determines relations for judgment; and, on the other hand, will is controlled by judgment, which supplies to it motive for action. Each determines the other, and each would move the other in a never-ending, meaningless and empty circle, resulting in nothing certain or good, unless one at least were fast-anchored in some universal and eternal principle of knowledge, the certainty of which is the same as God's certainty. Such certainty is found in *the principles of identity and contradiction*, as evidenced by consciousness, and which are in man's mind the same that they are in the infinite wisdom of God. Thus are we, at every turn, brought face to face with infinity. The ultimate basis of our certainty is laid somewhere on it. The soul has, in some way, infinity as the basis of its knowledge; yet it is finite; and nothing is infinite in knowledge but God. Then must it have some participation of that knowledge of God extended by Him to it as a sufficing basis of its intellectual and moral existence. Thus closely are we united to Him; and, without this participation, man would be an intellectual and moral failure, a waif; like a star let loose in the Universe, with its bulk and its attraction like other stars, but without *initial direction* given it by God to afford it an orbital path.

The field of *judgments* is much larger than the field of ideas, as the number of combinations is much greater than that of elements. Ideas in store to be presented by memory are countless; how much greater, then, the number of their combinations in *judgment!* This reflection will be more fully developed in the study of *ideal and imaginative synthesis*, in Metaphysics.

PROPOSITIONS.

We have seen that the *idea* is the immediate matter of *judgment*, and we shall soon see how *judgment* is the immediate matter of *reasoning*. The *idea* is only the remote matter of *reasoning*. *Idea* is the simple *radical*, *judgment* is the compound *radical*, in the *reasoning* process. A judgment is an act of the mind only and when it is uttered, or reduced to words, it is called a *proposition*. A proposition, therefore, is the *utterance of judgment*.

In opening the door to *propositions*, we open it to a long array of distinctions which the schoolmen have made; and, to follow it, I would have to fill pages with what would interest only a dialectician, as means to render himself expert in the art of offence and defence. This is not within my scope, and I shall enumerate only the principal and most important among them; trusting that others may be deduced, or sought for in a more elaborately dialectic work.

Judgments are confined to the indicative or subjunctive mood in expressing the *formal* verb, because, being of the mind and silent, the imperative cannot enter. All discourses, however, of any mood, no matter how small or how expressed, are propositions, or are reducible to them. Commands and prayers expressed in the imperative are reducible to them. When I say, *go there; do not go; come away;* I express a judgment on the part of myself, as though I were to say, *It is my wish that you go, do not go, or that you come away:* and if I pray to any one or to God, I mean *it is my desire that you grant me what I ask for.*

Propositions are divided according to their *matter* and their *form*, and the *matter* is the *subject and predicate*. These latter can be *particular* or *universal*, and they can be either *simple* or *compound*. The first division is the most important of all, since the non-observance of it is frequent; and any confusion of what is universal with what is not; or the confusion of one particular with another; leads to the greatest of errors. If I say, *any circle is round, all circles are round, the circle is round*, I say the same thing in different words, and make an universal proposition; but if I say, *a circle is a ring*, the proposition is particular, because some circles are not rings. I could not say, *all circles are rings. The English are a powerful nation*, is universal; but *the English conquered at Waterloo and were conquered at Yorktown*, expresses two particular propositions combined in a particular compound one; because they were not all the English in either case.

For the same reason, *the English beheaded their king, Charles I.*, is particular.

A proposition may appear universal to you and not to your adversary, or *vice versa;* in which case the burthen of proof rests upon the author of the proposition; for "what is asserted gratis may be gratis denied."

Compound propositions have either a multiple subject or multiple predicate; as, *Peter and John are dead; Peter or John is dead; Peter was disciple and apostle.* *Simple propositions* have neither subject nor predicate multiple.

Grammatical construction often confuses or misleads; therefore take care first of the sense—afterwards of the words.

The *form* of a judgment has been seen to consist in affirmation or denial of the agreement of subject and predicate; and *propositions*, following the form, are divided into *affirmative* and *negative*, accordingly as there is affirmation or denial. At first sight it seems scarcely worth while to call your attention to this, because it is so plain. It is worth, however, your close attention.

In the affirmative proposition the predicate is affirmed of the subject according to the whole *extension* of the subject as it is meant in the proposition. I speak, of course, of absolute, and not relative, propositions. Thus, if I take *circle* for subject, and mean it universally, the predicate will belong to every possible circle. If I say *a circle is round* (in an universal

sense of circle), the predicate *round* will belong to every possible circle; but if I employ the subject in a *particular* sense, the predicate will belong to only a part of its *extension;* thus, a *circle is white.* The predicate is affirmed always according to the predicate's entire *comprehension*, but not always according to its entire *extension.* In the above example whiteness is predicated according to all the attributes of whiteness, but not according to all the *extension* of whiteness, since there are other things white besides circles.

As for the negative proposition, it is simply the assertion that one thing is not another thing; and this is said universally of the totality. If I say *a man is not a brute*, I do not mean that there is no part of the *comprehension of brute* which can be predicated of *man*, for they are both animals; but I mean the totality of the *comprehension* cannot be predicated. You will perceive, however, that the predicate is removed according to its entire *extension*, for there is no brute whatever that is a man; and you will perceive that it is removed according to the whole *extension* of the subject according to the sense in which the subject is employed in the proposition. If the subject be understood as universal, the removal would be according to the whole *extension* of both subject and predicate; and if the subject be understood in a restricted sense the removal will be according to the whole of that sense and the whole of the predicate's *extension.*

From the above you will gather that in an universal negative proposition the subject and predicate are

convertible, and that in a limited negative proposition they are convertible according to the limitation; thus, *a man is not a brute—a brute is not a man—Peter is not a wise man—a wise man is not Peter.*

Observe, however, that in a negative proposition the negative particle must belong to the *formal verb*, and not to the *material subject or predicate.*

Affirmative and negative propositions may be *complex* or *incomplex*, which differ from *simple* and *compound* in this, that they qualify the *form*, whilst *simple* and *compound* qualify the *material. Peter is probably dead—I think Peter is alive*—are propositions which are both simple and complex; the simplicity affecting the subject and predicate, whilst the complexity affects the verb, rendering it of uncertain value. Propositions, therefore, can be at the same time simple and complex, simple and incomplex, compound and complex or compound and incomplex.

Propositions are *explicit* when subject, predicate and verb are all expressed; *implicit* when any one of them is implied. Languages of modern construction do not abound in *implicit* propositions, yet such expressions as *onward! halt! hush! death to tyrants! adieu!* are specimens of them which you will readily understand. In ancient languages they are a common form of expression; as *excelsior! Christianos ad leones!* and most of those sentences where one or more words are understood, contain implicit propositions.

I must now call your attention to a class of propo-

sitions that always go in pairs, and which are always, in some manner, opposed to each other. They are called *contradictory* when one simply contradicts sufficient of the other to render it false in any degree, however small; as, *all animals move; one animal does not move.* They are called *contrary* when one opposes the other universally; as, *all animals move; no animal moves.* Whenever they are opposed to each other in any degree, not universally, they are simply *contradictory*.

We shall conclude this list with the mention of two more species of propositions—the *categorical* and the *hypothetical.* The former is when the predicate is simply affirmed or denied without any condition; the latter is when condition enters in such a manner that the truth of one part of the proposition depends upon the other part. The mind prescinds from the matter and makes a logical deduction; as, *if a body is heavy it will fall unless sustained.* This species of proposition is a proper connecting link by which to pass from the consideration of *propositions* to that of *reasoning.* This we shall do after cautioning you to study well always *the sense* of a proposition without being misled by the phraseology employed. The sense will always reveal its nature sufficiently for reasoning purposes, without the task of committing to memory the scholastic tables of propositions and their properties. The next step, therefore, is from the second mental operation, in the order of reasoning, to the third and last—*reason-*

ing complete. This we shall best illustrate by an explanation of the *syllogism.*

REASONING.—SYLLOGISM.

I cannot approach the subject of syllogistic reasoning without meeting a strong current of prejudice against the syllogistic form. The syllogism has been greatly abused in the employment of it, but it is often indispensable as a rule for argumentation. As a sole rule to be always used, it is slow and mechanical, but an admirable discipline; and it will constantly deceive any one not thoroughly versed in the nature of its immediate elements—propositions. It is not singular in this, for any rule or scale will deceive those unacquainted with it. It is too artificial a way of reasoning in ordinary cases, having a tendency to check expansion of mind; but as a crucible in which to test the validity of reasonings, it is, to the learned, invaluable—almost indispensable. To the unlearned it is an *ignis fatuus;* to the dishonest charlatan it is a thing to be avoided; to the sincere scholar it is a treasure; and to the cause of truth it is a safe anchor fast in the solid rock of pure reason. I would recommend its use only as a test, and to form a habit of close reasoning, as I would the use of a plumb to a mason in building.

Since a syllogism is simply a reasoning reduced to form, it is important, before proceeding with it, to examine critically the nature and value of the process

called *reasoning*. Does it afford evidence by which its conclusions become true judgments? When we feel pleasure or pain or desire we cannot question the validity of our feeling, although we cannot, by any mental process, prove that validity. We are simply *conscious* of the internal fact. *Consciousness* is the evidence of it. So, when I reason by judging that all men are rational, that you are a man and that therefore you are rational, I simply deduce the last judgment from the truth of the other two as being contained in them; and the validity of that deduction is likewise an interior fact made evident to me by the same faculty that evidences my pleasure, pain or desire; by *consciousness*. No one can prove the validity of the reasoning process, because by proof is meant the result of reasoning itself; and no one can prove it or combat it without presupposing its validity in so doing.

I have, in treating of *evidence*, said that *reason* affords the highest evidence of all. This cannot be too strongly impressed. Reason is always the faculty of last resort, and by it other evidences are tested. The senses often deceive, and it is reason which decides as to whether or not they are acting according to the design of their author. If I place a straw in a goblet half-filled with water, the sight pronounces the straw to be bent when it is not bent. This report is corrected by reason which examines the sense's evidence. So is it with the other faculties. Reason learns that they are limited, learns their limits, and is the judge of

their evidences. It is therefore the surest of all evidences.

Some philosophers deny to men personal reason by declaring that there is but one reason in the universe, the infinite and eternal reason; and that we all perceive immediately by it. If the eternal reason were the immediate and *efficient cause* of our perception of rational deductions our intellects would be merely passive, and we might be only material beings. This is sophistry in the interest of *materialism.* We are, however, perfectly conscious of the activity of our intellects in reasoning and we take home to ourselves our acts as our own. It is not reason, but *consciousness* of self and its modes, which is founded upon the basis of infinite self-sufficiency; and we have not a faculty the value of whose evidence is not finally established by *consciousness;* since this is the immediate revealer to the soul of all internal and external facts; and, by an authority which is self-sufficient, it substantiates them to be facts.

We will now return to the *syllogism* to consider its form and composition. It is a form of perfectly natural reasoning, and consists in deducing, as an offspring, a proposition from two others in which it is contained. If you substitute *judgments* for *propositions* you will perceive that all simple reasonings are deductions of one judgment from two others framed by precise thought, in which it is contained; or, to speak more accurately, with which it is absolutely identical in totality of sense.

In the uttered syllogism, the two parent propositions are called the *premises;* the offspring, the *consequent* or *conclusion:* and the formal deductive process the *consequence.*

Each proposition has its subject and predicate, which are called the *terms* of the proposition; and the propositions of the *premises* are called *major* and *minor*, accordingly as the term is *major* or *minor term.*

The *major* proposition in the premises contains the *major* term of the syllogism, and the *minor* proposition contains the *minor* term of the syllogism.

We have disposed of one term of the *major* and one of the *minor* propositions; and there remain one term of each to be disposed of. These will be found to be alike in both propositions, common to both, and are called the *middle term.*

The *middle term* is related to each of the other two, which are called together the *extremes*, whilst it is the *mean* or *middle.*

The *major term* is so called because it has greater extension of individuals, and the *major proposition* ought, but not necessarily, to be placed first in the syllogism, as expressing something of a *genus* or *species* of which the *minor* term is part. In the following syllogism the *major term* is in small capitals, the *minor* in Italics, and the *middle* in Romans different from the text:—

Men are MORTAL.	Major proposition.
I am **a man.**	Minor proposition.
Therefore, *I* am MORTAL.	Conclusion or consequent.

The *major term* MORTAL has more extension than the *minor term I*, and the *minor* is a part of the *major*. The *major term* is therefore predicated of the *minor term* in the *conclusion*.

The two *extremes* appear in the *conclusion*, the *minor* as subject and the *major* as predicate.

The *middle term*, **Man,** is compared with both *extremes*, agreeing with each, appearing in each of the *premises*, but not in the *conclusion*.

When in doubt as to the *major term*, always look for the *predicate* of the *conclusion*, and you have immediately the *major term*, and with it you determine as quickly the *major proposition*.

The *middle term* must be *universal* in one of the premises, the reason for which will appear in the rules.

If both the *premises* be *categorical*, the *conclusion* will be *categorical*; and if either of them be *hypothetical*, so will the *conclusion* be.

After long study, experience and rigid criticism in *dialectics*, the schoolmen have elaborated eight rules to be observed in framing a syllogism, the violation of any one of which will vitiate the whole reasoning.

These are not arbitrary, but are founded on the nature of correct reasoning. They are as follows :—

1. Let there be three terms in expression and in sense.

2. Neither major nor minor term can be broader in conclusion than in premises.

3. The middle term cannot appear in the conclusion.

4. The middle term must be, at least once, universal.

5. From two particular premises can come no conclusion.

6. From two negative premises can come no conclusion.

7. From two affirmative premises cannot come a negative conclusion.

8. The conclusion must follow the weakest part of the premises.

The necessity for the first rule is, *primâ facie*, apparent, since there cannot be deduction with the use of only two terms, nor with the use of four or more. If you call a proposition a *conclusion*, and see the agreement of its subject and predicate immediately, without the intervention of a third term, it is clear that such a proposition is simply a primitive judgment, and not the result of reasoning; therefore it is not really a *conclusion* at all. When, however, the agreement of terms is not seen immediately, it is necessary, in order to ascertain it, to compare each one with a

third common to both; wherefore three terms are required for a syllogism. More would vitiate it.

When a syllogism is offered, take first a general, comprehensive view of it; see if it accord with your reason in order to fully understand it; and then be certain whether or not the same sense and meaning of each term is preserved to the end. A mathematical accuracy in this is all-important.

This first rule, however, notwithstanding its apparent simplicity, requires a more thorough study than the others, for the second, fourth, fifth and seventh are contained in it. It is very comprehensive, although the words "three terms" are very simple. To say that there must be three terms in *sense*, is to say that, as one term, a *part* cannot in one place stand for a whole in another; nor one *particular* for another *particular;* nor what is *ideal* for what is *real*, or *vice versa;* nor what is *common* for what is *technical;* nor *comparative* for *absolute*. Such expressions as cheap, dear, rare, far, high, low, &c., are always terms of comparison only, and are nearly always used in a *particular* sense. The use of the same term in two senses is the use of two terms, and the syllogism, having too many, would be faulty.

Observe that a syllogism is divisible into two parts, the *premises* (or *antecedent*) and the *conclusion;* and that the *conclusion* is the expression of what is contained in the totality of the *antecedent*. That must be just equal to this: there must be an equation complete—an *identity*. If one mean more or less than

the other, there is no true syllogism. The identity of antecedent and conclusion might be called the *formal identity of reason.* Many logicians rest the formality of the syllogism in the principle that *two things that agree with the same agree with one another.* I cannot see the truth of this universally, and do not deem it an *identical proposition* or self-evident truth. Equality, or agreement, of Major and Minor with Middle term, I do not consider, in considering a syllogism; but the *identity* of *antecedent* with *conclusion* determines in my mind the validity. The following violates the first rule:—

A horse is an animal.
A dog is an animal.
Therefore a horse is a dog.

There are four terms. If *animal* were used universally in the major and minor, it would be but one term; but since it is particular in its sense in each proposition, it is twice particular, which means it is different in sense in the two cases. Therefore there are four terms. The syllogism also violates the fourth and fifth rules. In the following the same rules are also violated:—

Money affords abundance.
Industry affords money.
Therefore industry affords abundance.

The middle term is twice particular; for, in the *major*, it means much money, whilst in the *minor* it may mean but little. There are four terms. The following violates the second rule:—

> The Americans defraud the Indians.
> To defraud the Indians is wicked.
> Therefore the Americans are wicked.

The *major* term *Americans* is particular in the premises, and therefore cannot be universally understood in the conclusion, nor in any wider sense than in the premises. No more Americans are proved to be wicked than those who defraud the Indians. The following violates the third rule:—

> A horse is an animal.
> A dog is an animal.
> Therefore horses and dogs are animals.

From the above it appears that when the third rule is violated there is no *deduction* of anything; therefore no sort of reasoning or syllogism at all. The conclusion is a simple affirmation, by summing up, of what are separately affirmed in the premises. The whole thing is a simple addition, affording as the sum a compound proposition.

For violations of the fourth and fifth, see the syllogism given above, which violates the first rule. The violation of the fourth and fifth always violates the

first, which is more comprehensively expressed. The fourth and fifth would therefore appear to be unnecessary; yet they are the rules most often violated in false reasoning; wherefore it is well to define them as narrowly as possible, the more easily to keep them in view.

An analysis of the fourth rule will, however, give you to understand better the comprehensiveness of the first. The formula, *let there be three terms in expression and in sense*, means that there must be three and no more than three; that they must all be expressed and precisely conceived; and that the *material* expression must conform to the *formal* mental conception of each term. This explanation, thoroughly examined and understood, will show the inclusion of the fourth rule in the first, and will be a magic wand under which most sophisms will dissolve.

Let us now follow the genesis of the conception of *middle term*. It means an idea or judgment common to the *major* and *minor* propositions; and its *material* expression may conform to its formal conception or not. It is the *formal* with which we deal. The *middle term* may be common, according to its whole extension, to both propositions; as when it is twice universal; in which case there is exact *coincidence*. It may be universal in the *major* and particular in the *minor*, when it is *common* according to the whole extension in the *minor*, and no more. The excess in the *major* is not common to both. In this case there is *inclu-*

sion, like a small ring in a large one. You can, however, imagine a case in which the *middle* term is limited in both *major* and *minor*, when it is twice particular in expression. If the extension of it be indefinite in either case, the two extensions are strangers, and cannot be regarded as touching each other, unless one be universal; but if the extension of the *middle* term be definite in each of the premises, although not universal in either, they may overlap each other; in which case the *formal* middle term is exactly coextensive with the overlapping. This only occurs with *quantitive* syllogisms. Thus, *some men* in the *major* and *some men* in the *minor*, are both indefinite, and there would be no *formal middle* term at all; whilst *ten men* in each proposition might mean the same ten; or parts of the two tens common. *Majority*, *most*, *two-thirds*, &c., are all quantitive expressions, and more or less definite. If I say, *all the class are studious*, and *all the class are minors*, there is *coincidence;* if I say, *most of the class*, or *some of the class*, are minors, there is *inclusion;* and if I say, *most of the class are studious*, and *most of the class are minors*, there is *overlapping* or *partial inclusion*. The *formal* conception of the number of the studious that are minors will be the *formal middle* term. If the *middle* term of the *major* and *minor* have neither *coincidence*, *inclusion* nor *partial inclusion*, there is really no *formal* middle term, and the expressed terms are two terms, in violation of the first rule; since two *middle* with *major* and *minor* terms make four. When, therefore, you deny a con-

clusion because the *middle* term is twice particular, you really deny it, because the premises have no *formal middle* term—nothing common. In the following syllogism the fourth rule is violated only apparently:—

Half the class plus one are studious.
Half the class plus one are minors.
Therefore at least two minors in the class are studious.

The *middle* term, *half the class plus one*, in the *major* proposition, is universal in reality, for it means the whole of fifty-one per cent. Now the whole syllogism is about a personal fifty-one per cent.; and as much of the *formal* fifty-one per cent. in the *minor* as is included in the same term in the *major*, is the *formal middle* term. This may be, *according to the conception*, from two upwards; and the syllogism would be properly expressed thus:—

Fifty-one per cent of the class are studious.
Two or more of them are minors.
Therefore two or more minors in the class are studious.

A term that is numerical and not abstract must be considered as different in species, and consequently in sense, from any undefined repetition of it in a syllogism; and it cannot be repeated as the same term.

The sixth rule would seem to require no illustration, for, when both *major* and *minor* terms are estranged and removed from the *middle* by denial or negation, there is no tie, no inclusion, and no *consequence;* notwithstanding which the following syllogism seems, at first sight, good, and at the same time a violation of the sixth rule:—

A horse that is not broken is not safe to drive.
A colt is not a horse that is broken.
Therefore a colt is not safe to drive.

There is true illation in this syllogism, for the knowledge that a colt is not safe to drive is deduced from the assertion that it is not a broken horse. A superfluity of *nots*, however, has made it *knotty*, and there are not really and formally two negative premises. Let us look for the middle term. So far as words are concerned, the two premises have no term common to both; yet the validity of the conclusion shows that a common term exists. If we take the middle as it is in the major, viz.: *horse that is not broken*, the minor, to hold it, should read thus: a colt *is* a horse that is not broken; when it shows itself to be affirmative. If, however, we take the middle as it is negatively removed in the minor, viz.: *a horse that is broken*, we find that it is not affirmed or denied in any way in the major, not entering into its conception. The minor proposition is affirmative, the negation

belonging to the *matter* and not to the *form;* and the middle term is *unbroken horse.* The following is an apparent violation of the seventh rule:—

A sin attaches to parents who neglect to train their children.
I am a parent who trains his children.
Therefore the sin does not attach to me.

There is true illation, but not real violation of rule. The minor proposition, considered in itself and isolated from the syllogism, is affirmative; but, in the syllogism, since its sense is to remove me from among neglectful parents, it is negative. If the *minor* be assumed as affirmative in the syllogism, it has no *middle* term common with the *major;* and, if the *middle* term of the *major* be brought into the *minor,* viz.: *neglectful parents,* a negative form would have to be employed to give the sense in the *minor,* and it would read, *I am not a parent who neglects to train his children.* The negative conclusion then follows the weakest part of the premises, according to the eighth and last rule. The weaker part is *negative* as compared with *affirmative,* and *particular* as compared with *general,* or even with a more extended particular in which it might be contained. Affirmation cannot come from a negation, nor from two when they are separated in two separate propositions; nor can more come out of less. Without further reasoning, it is

apparent that where this rule is violated there can be no *identity* of *antecedent* and *conclusion.*

The syllogisms given in illustration of the rules are simple and categorical, but all are governed by the same legislation. Always attend most strictly to the sense of the ideas as they are used in the propositions, and to the sense of the propositions as they are used in the syllogism. Both may differ *in place* from what they might mean in another place. Observe closely all propositions clothed in negation, and distinguish whether the negation belong to *form* or *matter;* since, in the latter case, they are affirmative. Distinguish also the nature of the matter as to whether it be absolute, relative, comparative, real or ideal; for the same nature must go through the syllogism. Above all, watch the insidious danger of confusion of universal with what is not universal, and of one particular with another particular; since herein lies the source of most frequent error.

The following syllogism is false:—

Spirit corresponds with body.
Body is subject to disease and decay.
Therefore spirit is subject to disease and decay.

The *major* proposition may be true, but the *correspondence* is according to different persons' ideas of it; it is entirely *ideal;* whereas the conclusion is quite *real,* being according to the same understanding in all.

The proper way to reply to the *major* proposition is to distinguish it and to deny that spirit corresponds with body in such a way as to be of the same nature and subject to the same laws; and to say *transeat* to every other idea of correspondence as not bearing on the conclusion. The following syllogism is apparently good at first sight, and the conclusion paradoxical:—

Rare things in Paris are dear.
Cheap horses are rare things in Paris.
Therefore cheap horses are dear.

A thing is here apparently proved, by true premises, to be both cheap and dear at the same time.

Before replying to this I shall ask you to remember an admonition recently given and to observe whether the terms be absolute or relative. Take also a look over the whole syllogism to see if it conform to your natural reason. The same horses cannot be worth a fixed sum and a less sum at the same time and place. The reply is to distinguish the *major* by denying that rare things in Paris are *absolutely* dear though they may be *relatively* so; and to pass the *minor* proposition. The *conclusion* must be distinguished like the *major* by denying that cheap horses are absolutely dear though they may be relatively so, either in Paris as compared with other places, or dear in Paris as compared with other things. There is a variety of relative ideas in this syllogism calculated to confuse a tyro in Logic; rare, dear, cheap, Paris as compared

with other places, and horses as compared with other things; yet, by one distinction the paradox dissolves.

We must be careful to not confuse Logic with its subordinate sciences. Logic furnishes the conception of *definition* and its laws; and it is its province, not to define all things definable, but to see that they are properly defined. Grammar and Mathematics must take their legislation from Logic, and are subordinate to it; yet they should define their proper terms, doing so according to logical laws. It is sufficient for Logic to define its own terms, itself, and other sciences; leaving these in turn, to make their specific definitions within their bounds. Not observing this order, some logicians have introduced into Logic the definitions of parts of speech, such as verbs, substantives, &c., and qualifications like nouns proper, nouns common, nouns qualificative, nouns distributive, nouns collective, &c. We ought not to open this door to intrusion, because if we do we cannot determine when to close it; and we might have to define, not only all parts of speech, cases, moods and tenses; but the divisions of Arithmetic, Geometry, Algebra and all the Calculi, as well as all geometrical lines, figures and solids. It is logical to close the door and let each subordinate science formulate its own definitions logically. A vast number of propositions, based upon grammatical ideas and mathematical relations, quantities and figures, would otherwise demand our attention; and quantitive syllogisms without number would fill up

the pages of a logical treatise, making it a repository of riddles rather than a scientific work.

We need not, in an elementary work, pursue the subject of syllogisms and follow it through a maze of complicated propositions and syllogistic forms as tabulated in many books on Logic. "Hacking Logic" is not our purpose; for although this may amuse a mind, and make it artful and acute, it will not make it wise. It is the overdoing of this that has brought upon the science the reproach of being the art of splitting hairs, of dodging truth, of concealing errors, and of making generally the worse appear the better part. It educates an able sophist but not a profound thinker, a philosopher. I desire you to have a good knowledge of Logic and a proper estimation of the science.

We shall pass now to the consideration of a few other forms of reasoning often used and often properly used, all of which are reducible to the syllogism.

The *enthymeme* is most common, and is a syllogism in which one of the premises is not expressed, but understood, thus:—

The wicked are miserable.
Therefore they are to be pitied.

The *major* proposition, *all that are miserable are to be pitied*, is understood. If we should change that

phraseology and say, *whoever is miserable*, we should mean it in an universal sense.

A *sorites* is a series of propositions in which, throughout, the predicate of one is the subject of the next; the predicate of the last in order being affirmed of the subject of the first proposition; thus:—

A horse is an animal.
An animal is a living body.
A living body is destructible.
What is destructible is mortal.
Therefore a horse is mortal.

In a *sorites* it is evident that all the propositions must be universal.

The *dilemma* is a compound argument, presenting two alternatives or *horns*, the truth of either of which proves the conclusion. The alternatives are presented in the form of a disjunctive proposition, whose parts are so related that you conclude from the whole of it what you would conclude from either part. The dilemma proposed by our Saviour to the Jews, when they accused Him of being an agent of Beelzebub, in casting out devils, is familiar to all. The argument is as follows: *I cast out devils by the power of God or by that of Beelzebub. If by the power of God, I am not the agent of Beelzebub. If by the power of Beelzebub, I employ it against himself. Therefore in neither case am I his agent.*

From the subject of learning how to reach the truth in reasoning, we shall now pass to that of avoiding error in reasoning, and learn some of the ways of *sophistry*.

A *sophism* is defined *an argumentation hiddenly false;* and nearly all the world is deceived by sophistry. Argumentation openly false will not deceive any but those wishing to be deceived; in which case they wilfully refuse to consider the truth and habituate their minds to error for the love of it; not for the love of error as error, but for the love of a particular thing, which thing is an error. Mankind are much self-deceived, but unwillingly so only by sophistry. It is well, then, to understand it.

One species of sophism is called the *vicious circle;* which is proving one thing by another which has been proved by the first. If I were to say that the soul is a non-compound because it is naturally immortal, and afterwards argue that it is immortal because it is a non-compound, I would argue in a *vicious circle*, proving nothing.

Another species is called *begging the question;* which is assuming as true, in a covert way, that which is in question. The great philosopher Des Cartes has left us a memorable example of this sophism. In the skepticism which he assumed as to the reality of his existence, he fell back upon the reality of his thoughts, and argued: *I think, therefore I exist.* The employment of the Latin *cogito*, without the pronoun which was truly the doubtful quantity, was calculated to

mislead; but the *ego* was understood. In the modern form of language the *I* would have been expressed, and would have been asserted at the start. This form of sophism is not at all uncommon.

Equivocation, in its etymology, signifies *one word with several meanings*, and consists in employing one word in more meanings than one.

As *equivocation* regards words, *ambiguity* regards propositions, and consists in the use of the same proposition in different senses. If I say, *there is a higher than human law for man to obey*, I employ an ambiguity. There is a higher law for man to obey in preference, when a right conscience requires it; but not a higher law for men to strain a false conscience over, for the purpose of avoiding obedience to the laws of the land. The proposition may be understood in either sense, and when a question arises as to the true meaning the ambiguity appears.

The sophism of *separation and conjunction* consists in deception by the use of several predicates conjoined in a sense different from what they would have if used separately; or *vice versa*. *The sun rises and sets*, not according to conjunction of the predicates, both at once, but separately. On the other hand, *the sun rises and shines*, not separately, but conjoinedly. Therefore it would be sophistry to deduce that the sun can rise and set at the same time, or that it can rise without shining at the same time.

Confusion of qualities consists in deception by confusing qualities essential with qualities accidental. If,

from the fact that joy sometimes kills, you were to deduce that joy is therefore bad, you would employ a sophism of the above character, because it is not of the essence of joy to kill people.

Ignoring the question is expressed in common language *dodging the question*, and consists in avoiding the real issue by setting up a false one in its stead. If you were to deny the right of capital punishment by opposing the commandment *Thou shalt not kill*, you would avoid the issue of *the right of society* by substituting that of *private right.*

No cause for cause consists in deception by assuming that to be a cause which only precedes without the relation of cause to effect. *Day follows night and night follows day, therefore each is caused by the other*— is a sophism of *no cause for cause.*

False supposition consists in supposing as true a thing that is false, and diverting attention from the supposition to an argument built upon it; as when a clerk, knowing that his accounts have never been supervised, asks a new situation and argues his fitness for it from the fact that no error has ever been found in his books.

We have now reached the conclusion of Logic, and have seen, when the occasions seemed to make it interesting and apposite, very considerable metaphysical knowledge injected into its pages. This plan has answered a double purpose—first, in detracting from the proverbial dryness of Logic; and secondly,

in affording subjects for the application of the laws and principles of Logic, which we were learning. For this purpose I have chosen matters of the gravest and highest importance—matters with which all thinking men should be familiar, and to which they ought to apply their highest logical science. The understanding of atheism, skepticism, the difference between the human and the brute mind, the unity of the universe, and the common source of all physical, mental, natural and supernatural laws, is much more important than that of Logic itself; and is necessary to every finished education. Some readers may rest satisfied here, without pursuing Philosophy any further; and to such the reflections which have been made will not only be useful in themselves, but will often recur to the mind, when in serious mood, as suggestive of other thoughts for meditation. This process, repeated and become habitual, will give the mind a philosophic bent, after which it will choose intellectual pleasure in preference to any other.

I have not attempted to teach one science under cover of another, but the two concomitantly, as germane to each other; and if you close this little volume with the acquisition of more knowledge than is commonly gathered out of treatises on Logic, so much the better for you, and so much the better for the volume. This has left the door wide open for criticism. It will be styled rather an essay than a treatise on Logic, and its order will not be approved by the most methodical of teachers. A retrospect,

however, persuades me that it will be easily understood, and that its modicum of science is sufficient for an elementary course of Logic.

The article which follows, entitled the *Division and Definition of Sciences*, has not a title *ad captandum*, but it is of the very highest importance. Therein is mapped out the whole general ground-work of Philosophy, with its two grand divisions of *subjective* and *objective* explained; also the divisions and definitions of its principal subordinate sciences. Short as it is, it has cost more mental work than the whole volume on Logic, and is open to a higher order of criticism. It contains a generalization which was not undertaken without some misgiving — some wholesome fear; but with more of hope that a good end proposed might aid and fortify the means.

END OF LOGIC.

Division and Definition of Sciences.

Early in the course of Logic we learned the precise meanings of *division* and *definition*, but have had, as yet, little experience in the application of them. It is important now to hold those conceptions well in hand, for we are about constructing a general map of Philosophy, with divisions and subdivisions, all of which ought to be carefully and accurately defined. We have styled Logic the first part of Philosophy; wherefore, before proceeding further, we should take a retrospective view of its whole scope, determine precisely what it is, and why it is a part, and the first part, of Philosophy. In the treatment of it I have made it as simple as possible, analyzed its different parts, have avoided the introduction of all scholastic terms that could be dispensed with, and have studiously avoided giving any part of it a grammatical or mathematical character. Remembering ever the great issues of the age and their important bearing upon Society (to say nothing of their bearing upon the final destiny of individual men), I have taken pains to frequently step

aside to apply the dry principles of Logic to those issues, for the sake of interest and utility. For this I do not apologize to critics, being satisfied that the end warranted the means, and having proposed to myself as an end the accomplishment of good.

We have examined some of the elements and laws of thought, but we do not yet know what Logic is until we characterize the object proposed in that examination, and learn the light in which its parts have been examined. Any logical study of the laws of thought, no matter how wide or narrow, could afford only the knowledge of logical legislation, *pure Logic;* and this is a very unsatisfying conception of Logic as a science, to say nothing of its exclusion of practical Logic entirely. A clear retrospective view should satisfy that we have examined the elements of mind or thought according to their functions in reasoning; have examined the sources of knowledge possessed by the mind with reference to the part which they play in affording correct reasoning; have classified ideas and judgments as mediate and immediate material of reasoning; and have elaborated the processes of dividing and defining subjects of thought, so that they may be distinct and unmistakable elements in the science whose object is correct reasoning. When we have studied these things in any other light than as elements of that science, we have gone outside of it; and our sins of that character are more open to criticism than our conception of Logic as a science.

These considerations give us the genesis of the idea

of Logic. It was not thought well to define it before learning, within its own realm, what a definition is and how to make one; from which you will understand that Logic ought to be the first of all sciences studied, in order that you may systemize, in any science, the varied informations gathered up from an infinity of sources; and so reason about them with precision and correctness. Since therefore Logic furnishes the conceptions of *division* and *definition* and their legislation, it is its province to divide and define all sciences. We shall bear this in mind for application to the different sciences which we propose to study, and shall now let Logic commence its definitions by defining itself. We have just seen the genesis of its conception, and have experienced that it is both theoretical and practical; the description therefore of it given in the introduction, as *the science of reasoning and the art of correct reasoning according to science*, is its real and true definition.

Logic has had to bear many definitions which have had their rise, either from a wrong conception of it, or from one that is insufficient. That which defines it as *the science of reasoning* comprehends only the theoretical part, and is insufficient, although the conception is in the right direction. Whatever defines it as any other science is wrong. Some logicians define it as *the science of the laws of thought or thinking;* but, for several reasons, this definition cannot stand. 1st. It does not include the practical division of Logic at all. 2d. *The laws of thinking* is too broad; for there is much

thinking (in the broad sense) done which is not in the order of Logic; as in simple *attention*, *reverie*, *dreaming*, *imagining*, *remembering*, *rejoicing*, *grieving*, &c., as these are performed by man. 3d. *The laws of thought* is much too broad; for, in the received philosophic meaning of *human thought*, any change or modification whatever of the thinking subject *of which it is conscious*, whether by intellect, sensation, will, or any faculty, is a *thought*.

Certainly the laws of thinking or of thought, as developed by a study of the primary faculties in Metaphysics, are outside of the contemplation of Logic, which, as a science, deals only with mental elements and processes *as a means* to be employed in the acquisition of true knowledge. When we explain these elements and processes otherwise than as *mental machinery* by which to acquire truth, we do not explain them as parts of logical science; and when we explain their natures for themselves, simply to impart knowledge of them for the sake of knowledge or erudition, we are explaining Metaphysics, not Logic. The laws of thought then that govern the simple operations of the primary faculties, without comparison of results for the purposes of reasoning, are metaphysical, not logical, laws. The subject is important, and we should satisfy ourselves by further investigation.

When a mature and thoughtful mind begins the investigation of itself, it starts an analysis, and soon perceives that it can regard its activity under two aspects. The first of these is as a means of inquiry, of investigating itself and other things. It naturally

investigates its powers before it becomes the subject of its own investigation; studies its means before the subject to which they are to be applied. Under this aspect alone it is a sufficiently rich subject to be the object of a systematic science. What is this science of *thought as a means?* It is certainly pursued in a course of Philosophy, and, if it be not theoretical Logic, it has no name. Logical science, then, is the science of thought as a means. A means to what? Means supposes end. What is the end proposed by Logic? The better acquisition of knowledge. Now what is knowledge, and how is it obtained? It is not apprehension, nor idea; nor conception, nor perception, of a sensation or a part of a sensation by abstraction. If you have only any of these and know nothing about it, you have no knowledge about it; and if you had only such things, without a mental comparison, you would have no knowledge at all. To feel is not to know, although practically nearly all sensations become known; and, to know, you must have at least two ideas, and unite them in such a way that one shall be known about the other. This is *judgment*, and all knowledge is judgment. Logic, then, is the science of acquiring correct judgments; and primary judgments would be of little utility without deductions from them. In science they would be but the first step, and the completion of them would be *reasoning*. Again, we have seen that judgment follows spontaneously the advent of *evidence*, and that all evidences (except that of *consciousness*, which is the ground of mental existence)

are subordinate to reasoning. It is, therefore, the science of reasoning that we pursue when we study mind as a means to knowledge. Reasoning, moreover, is the most complete operation of the mind as a means; every mental element being an integral part of it. It is *the entirety* of mind as a means; the highest and ultimate subject of logical investigation.

The second aspect under which the mind regards itself is as an object of science, like any other object; and, thus considered, its legislation, as I have said, belongs, not to Logic, but to Metaphysics.

In common with all sciences, Logic has two parts—the *form* and the *matter*. The form is the legislation, and this is pure Logic. When the matter, *knowledge*, is subjected to logical legislation, we have what is called *applied Logic*. Pure Logic deals only with the laws of reasoning and its elements; and since the laws are according to the nature of these elements, they are, like the laws of mathematics, natural and fixed. The laws of Society do not furnish the acts and conduct of men which they govern; the laws of Grammar do not furnish the language; the laws of Astronomy do not furnish the stars; and, in like manner, the laws of Logic do not furnish the human knowledge and activity which they govern. These must be derived from other sources, through the immediate interposition of evidence of some sort. Pure Logic is, therefore, abstracted from practical application, and is hard and dry, like the rules of Grammar and Mathematics. This is why I have adopted the

plan of applying it frequently to interesting matter; thus insuring the better understanding and remembering of it. The sources of truth, as shown in the article on *evidence*, are really *a means* of acquiring truth; are the ministers to the intellect in reasoning; and, as such, they properly enter, as a part, into the science of reasoning. I have treated them in company with *judgment*, which they directly serve with terms of comparison. This is out of the usual class-book order, but I think the reader will acknowledge that the new plan has served a good purpose.

When we say that Logic is the Science of reasoning, we do not completely understand the definition without defining *science* also. You may say that a science is knowledge, or many knowledges, about a specified object. It is, however, more; for the man who knows most is not thereby the most scientific. Long series of disconnected informations do not constitute a science: they must be ordered in such a manner as to be one series systemized for a certain purpose; universal metaphysical principles must underlie the system as parts of *premises*, as general propositions in which particular are contained; and the growth of science must be by conclusions in reasoning. Science, therefore, is a series of reasonings; but for what purpose? To give the fullest and clearest attainable knowledge of any object considered. There is its definition.

The name of a Science is determined by its object, and natural sciences are logical, metaphysical, ethical

or physical. Some philosophers place the mathematical in the category; but the laws of Mathematics are only according to Logic, and their application mainly according to Physics. The subordinate physical sciences are Astronomy, Chemistry, Geology, Biology, Physiology, Botany, Mineralogy, &c., and are almost without number.

We do not, I hope, propose to part company at the end of Logic; and it is presumable that we are here preparing for an advance in science. Let us, therefore, from an elevation, take a broad, expansive view of where we are, what we have traversed, and of what lies before us.

The systemizing of the science of reasoning led us to a knowledge of its elements, inasmuch as they are radicals, more or less compound, in that science; also to a knowledge of the laws of reasoning; and to the adoption of rules for correct reasoning, the application of which in practice constitutes practical Logic an art. We have seen that evidences, upon which judgments are formed, furnish the sources of all human knowledge; since all knowledges are judgments: and that, therefore, the analysis of *evidence*, as a means of acquiring knowledge conducive to reasoning, properly belongs to Logic. In Logic we have studied human thought as a means of acquiring the fullest knowledge of itself, and of all other objects that we may wish hereafter to know; as a means to make us know, not as a thing to be made known to us. Just as Grammar is *discourse about discourse*, as a means to complete

knowledge; so is Logic *thought about thought*, as a means to complete knowledge; and this is designed to give us the best science of our powers, consequently the best ability to reason upon all things.

The common catalogue of sciences is large, but there is scarcely a limit to the number of possible sciences; and each must rest upon a metaphysical basis—must have its own particular metaphysics—since no one can advance without universal and necessary principles. Without these, and ideas conceived in, and derived from, the mature intellect, science would be disjointed, chimerical, impossible. *Identity*, *diversity*, *similarity*, *equality*, *&c.*, are *subjective* elements following compared experiences; necessary to every mature intellect; derived immediately from the interior and not from sensations. These are only the remote occasions, not the parents, of the ideas, which are innate. As for the metaphysical principles, such intellectual formulas as the expressions of the principles of identity and contradiction; *the whole is greater than its part; things equal to the same are equal to one another;* and all other *axioms;* are derived *a priori*, not from experience; and are the broad principles which cover the necessary relations among all the particulars of sciences; are, in short, the foundations upon which science starts and which make it everlasting.

We are now prepared for the broadest possible, the philosophic, view of the mental man. We find him dwelling amongst his fellow-men, in society, learned

in sciences, skilled in arts, deft in habits, highly emotional, æsthetic and useful; mindful of ancestry and provident of posterity. He is endowed with many faculties, by the exercise of which he is all this; and the acts of these, singly or combined, in purest simplicity or greatest complexity, should be characterized by some expression which may be the object of scientific investigation. Philosophers, then, have properly termed *human thought* any act, change or modification whatever, of the human thinking principle, *of which it is conscious;* whether such be by knowing, willing, desiring, or even feeling. Thought *as a means* we have considered in Logic. What, then, would be the science of human thought in its broadest possible sense; considered in its elements compound or simple, their natures, and its and their general functions and general laws? The reply to this is momentous; it fixes the centre about which all else revolves.

It is in human thought that all its sciences are correlated; and that all order, and legislation for all, is evolved. What we know naturally of God is according to our conception of the infinite, the necessary, the first cause, the eternal, the absolute; and what we know of His supernatural revelations is according to our conception of the relations of man to God. The whole science, then, of Theology, natural and revealed, is correlated with other sciences and knowledges in human thought, and is subject to its legislation. There is, therefore, one supreme and sovereign

science correlating and governing all others, a *science of sciences*, and this science is PHILOSOPHY.

We have not yet completed the definition. As far as Philosophy is the science of human sciences, it is purely speculative, intellectual; and the conception of it is the theoretical science of human knowledge. Man, however, wills and operates, as well as knows; and, by acts, habits and education, becomes a master of arts as well as of sciences; for the good and the elevation of himself and his species. All these taken together are the products of the human thought in willing and knowing. Practical Philosophy must, therefore, be united to theoretical to constitute the science of human thought in its entirety, Philosophy entire. Philosophy, then, is defined broadly *the science of human thought.* It is worth your while to pause and reflect upon this definition. There is one absolute and necessary Being, one created Universe, one system of parts, one specific human thought to conceive all, and one specific human will to operate in correspondence with it. All the ideas that we have; whether *Ontological*, as *substance*, *quality*, *cause*, *effect*, or other necessary ideas; *Cosmological*, or such as the conception of the *Physical Universe* contains; *Theological*, or *Physical;* all form parts of the subordinate sciences correlated in human thought and moving human will. This *Philosophy entire* examines the systems and laws of all sciences and, in its sovereignty, exercises supreme legislation over all. The explanation, soon to follow, of the *status* of Philo-

sophy in modern times, will make these conceptions still clearer to you. Many definitions have been given of this grand word, and the broadest is that which expresses it as being *the science of whatever is.* Broad as is our own, this is broader still; and the question is overlooked as to what kind of science, whether human or super-human, can embrace *whatever is.* Philosophy is only human science; and in the infinite mind of God alone is there a *science of whatever is;* but language has no name for, and human thought no powers adequate to, such science. Philosophy is according to human thought, and all-comprehensive according to human thought. All mental habits; all arts and sciences attainable; are the products of human thought by means of knowledge and will; and they are its natural limitation. The science of that *thought* in its entire latitude, as to all that it can know and will, is, in this natural life, our utmost science. Philosophy is therefore properly defined *the science of human thought.*

There is, strictly speaking, no such thing as *mental Philosophy*, as a species of Philosophies; nor *natural Philosophy*, nor any other Philosophy characterized by particular objects of scientific pursuit. These are sciences only, and we should not make confusion of terms.

Our definition does not correspond with the ancient, nor with the commonly-received, definitions of Philosophy; and the reason is soon explained. Philosophy is on a new basis, and one that the common mind has

not comprehended. It is natural for this to assume that its ideas have an objective value; that they are not only subjective, but that they are really worth something, and that they refer to corresponding existences out of the mind. The older systems of Philosophy likewise took for granted the objectivity of ideas, and they were what is properly termed systems of *objective Philosophy*. Doubt, however, in more recent times; both the philosophic, *methodical* doubt of Des Cartes, and the skeptical doubt of Hume and Kant; has repulsed asserting dogmatism absolutely, discharged realities from ideas until proved, and forced Philosophy into *criticism*, taking nothing for granted.

For fear that the expression *methodical doubt* may not be comprehended, I shall explain it. Des Cartes was not skeptical, but he properly reasoned that Philosophy should not assume anything not reasoned out or experienced; and he affected a doubt of the reality of his existence, *as a method* of reaching a proper foundation. This he believed he found in his actual experience of his thoughts; and from their reality he deduced his own. That this process was a *begging of the question* it is scarcely necessary to say. His method, however, of raising a philosophic doubt about everything not proved or experienced by *primitive experience*, is correct. Philosophy is exacting and free, and we must start upon an absolutely sufficient *experienced* basis, not an intellectual formula, to erect a structure of certainty and reality.

If we start by yielding that corresponding realities

do not belong to ideas until proved, we start in *subjective* Philosophy; in the realm of the exclusively ideal; and you may naturally ask: *how will we ever find our way out?* If we do not find our way out, we must remain disciples in the "Transcendental" school of Kant; skeptics;—but these we do not propose to be. We must, however, find a sufficient basis for *objectiveness*, because we cannot assume it. This is not found in the senses, for we know that they deceive when not rationally governed. A sufficient basis of experience, however, we shall find, and one that every skeptic does, and must, acknowledge in reality, even when he denies it in words. Skepticism absolute is an impossibility, and when men avow it they avow a falsity; because no dogmatism whatever, not the slightest or first act of it, is compatible with absolute skepticism; any dogmatism excludes it: yet every skeptic does, and must, dogmatize, when he speaks of his *self*, his thought, his denial, or even his doubt. He assumes the reality of that *something*, and of *something else* that is thought about it.

To ask the question: *Does human thought correspond to any reality outside of it; or is it actually, and as to all its value, entirely subjective?* and to ask it in sincerity and earnestness; would be to stand, like a statue, unable to stir, fettered, as to movement, by all-comprehensive doubt. If such a doubt could be, no effort, nor repeated efforts, could move forward, in the slightest degree, the frozen Intellect. To a mind enchained by such a doubt there could be no Philo-

sophy, no science; for such a doubt in the Intellect would be a void, a *nothing* in the Intellect, a suspension and temporary death. Yet does the self-styled skeptic contradict himself; for, whilst he asserts that all things are in the utter darkness of uncertainty, the nothingness of unreality, he dogmatizes as to the reality of an intelligence that knows it; he supposes an illumination shining singly in the darkness, and a *flame that illuminates.* He supposes the reality of the *self* that thinks, that asserts, and that *experiences* the doubt. This *experience* of the reality of *self* in self-consciousness: of *self* that *experiences* a *non-self* at every sensation; that *experiences* the existence of, the quality of, and the immediate revelations of, the primary faculties; is then virtually acknowledged by all who think, be they men, philosophers or skeptics. These are the inmost, primitive and radical experiences, revealing the first *objects* for analysis. They are the indemonstrable basis of a true Philosophy; and *consciousness* is the portal through which we pass from the realm of the exclusively *ideal* to that of the *real. Consciousness* is the plainest and clearest of all natural facts; at the same time the most wonderful and incomprehensible of natural mysteries; depending upon whether it be viewed by the common, or reflexly by the philosophic, mind: and meditation upon it, as applied to *self*, raises the intellect higher towards a conception of what is spiritual and outside of the order of time. Reflex mediate consciousness links the soul to all outside of it, and is the means

ordained by Infinite Wisdom to place the soul in communication with the *real* universe. Such a means could have been conceived only by the Infinite.

There is but one Philosophy and no subordinate Philosophies; only parts and subordinate sciences. The subordinate sciences are all sciences. Highest among these is one that is purely and exclusively mental; and which includes, as parts, all purely mental sciences. This is Metaphysics. What is meant by purely mental sciences are those whose characteristic objects are presented by the interior faculties, and not by the external senses. These present the objects of physical sciences; those the objects of metaphysical sciences; and which are the nobler you may discern by this distinction. Metaphysics was formerly defined *scientia rerum per causas*—the science of things by their causes; but this was under the reign of exclusively objective Philosophy. Criticism has since afforded a truer definition, of which we shall follow the genesis. Logic was seen to be the first of all sciences in order of learning, since it prepares the mind, as an instrument, for acquisition of sciences. It is, itself, a science of the faculties, exterior and interior, in a certain line of operation, with *ideas* as the ultimate element; and Metaphysics carries on the work there begun, but in a broader way, towards the perfectioning of it. It takes these ultimate elements *ideas* and investigates their *subject*, their *formation*, their *nature*, their *origin*, and their *value*. This is the proper function of Metaphysics.

Our ideas, however, are all derived through the activity of the faculties, and the science of the faculties will afford us a knowledge of the nature of their products. The investigation of the *subject* of our ideas and faculties involves that of the nature and natural destiny of it. This *subject* is the soul; and the science of its faculties, nature, and natural destiny is Psychology. The exploration of the sources whence comes the material upon which the activity of the faculties is expended, and of the mode in which that activity is exerted in elaborating ideas, is in the science of Ideology, whose object is *the origin and formation of ideas.* Psychology and Ideology are, therefore, the parts of Metaphysics, which is defined *the science of the human soul and its faculties, and of the origin, formation and nature of ideas.*

It is now understood why we have not included in Metaphysics its commonly-accepted subordinate sciences of Ontology, Cosmology and Natural Theology. These are *objective* sciences, and their realities are assumed against the protest of *subjective* Philosophy, which can consider only human *thought.* In Ontology we are confined to such ideas as are necessary to the human understanding; like *substance, quality, cause, effect, time, space, finite, infinite,* &c., and we ask, *what is the origin, the nature, and the real value, of these ideas?* It is, therefore, plain that Ontology is a part of Ideology.

These ideas compared lead us to the conception of *Being necessary, absolute and infinite, the First Cause*

and Creator of realities, which becomes the object of the science of Natural Theology.

The conception of created realities is applied by thought to the visible Universe; and the conception of the Universe, with all that is contained in that conception, enters likewise, as a part, into Ideology. This science is Cosmology.

In all of these three parts the most important consideration is that which determines the *value* of the ideas. Have they an objective value, or have they not? This is the momentous question, the question upon which are divided *idealists*, *skeptics*, on the one side; and *realists*, philosophers, on the other.

The question has been resolved, and the point of contact where Subjective Philosophy touches Objective Philosophy has been discovered; since both are seen to rest upon the same primitive basis of *experience by consciousness:* that upon the experience of *self* modified by reasoning; this upon the experience of *self* modified by what is not self. That experience reveals *action;* this experience reveals *passion.* That experience reveals *unity;* this experience reveals *plurality;* and upon this difference Philosophy has been illogically made two by separation; the so-called "Transcendental" claiming the right to be exclusive. Now nothing less than the self-sufficing knowledge of God can underlie the actual two-fold experience of consciousness as an *ultimate*, self-sufficing basis; and this two-fold experience must be the *penultimate*,

the common basis of both Systems; hence the claim of "Transcendentalism" to exclude "Realism" is a pure assumption against reason, and is void. We are more logical and more tolerant; we admit the whole *ideal* that is rational, but we cannot allow it to expel the *real* to which it is *twin*. The error is in excluding either, and it is gratuitous.

When once evolved and clear, Objective Philosophy is the truly transcendental; since the *real* transcends the mere *ideal;* since God, His System with its conditions, and His Creation, transcend infinitely *nothingness*.

Most ideas are wrought by attention to, and reflection upon, our sensations and internal experiences; but all *essential* ideas are, through successive abstractions, born of meditation upon *universal ideas*. The occasions for these, sooner or later, are wanting to no man; and no general rule establishes how soon or how late, since it is impossible to say at what period precisely a young intellect begins to meditate upon universal ideas; begins to brood. Some *essential* ideas being only ideas of relationship, as *identity*, *diversity*, *similarity*, *equality*, &c., have no objective value, being subjective as to origin, formation and value. Such ideas, deriving entirely from the nature of the understanding, are, in a true sense of the word, *innate*.* Not elaborated from sensations, they are, by the synthetic

* *Innate*, as applied to ideas, is an equivocal expression, since writers differ as to the meaning that they attach to it. Some mean by it ideas

activity of the spirit, added to its experiences from the subject's own interior. Other essential ideas are *subjective* as to their origin and formation only; being objective as to their value, and corresponding to realities. These and his innate ideas, which are in every man, and therefore natural to him, are sufficient to afford him a true natural Theology and a true conception of the created and harmonious Universe. Principal among them and somewhat according to the chronological order of their birth (differing perhaps in different individuals), are *substance*, *quality*, *unity*, *diversity*, *number*, *extension*, *action*, *passion*, *power*, *place*, *time*, *space*, *cause* and *effect*. To these must succeed, as ideas necessary to more complete intellect, *finite*, *infinite*, *absolute* and *spirit*. I have placed *spirit* last, because the necessity for, and the reality of, its idea are disputed most by men of scientific learning. To many intel-

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imprinted upon the spirit at its creation and preceding, of course, all external or internal experience. The existence of such has not been proved. Others mean another species of subjective ideas which follow experience, and which, not deriving from objects, are applied to objects by a synthesis of the intellect. Such are those of pure logical relations following comparisons. Others again claim as innate all ideas that enter into necessary truths, as *whole* and *part;* whilst others still as properly so claim all simple ideas that are necessary to every understanding, since these are elaborated from the essentials of every human individual. The whole question is unsatisfactory because the term *innate* is not defined for a common understanding of it. The spirit certainly was never in possession of an idea of which it was unconscious, or previously to all experience; although every spirit is, in the beginning, by its author, conditioned in certainty as to all its experiences in *consciousness* afterwards to be had.

lects, however, owing to their greater completeness, the necessary idea of *spirit* is more constantly present as real, than perhaps any other; because it is the idea of *self*, the *perceiving* and the *first perceived;* the first idea completed by analysis, and one which accompanies, in such intellects, almost every reflex thought.

This idea is derived from an unique experience, from a true sentiment of *self sensitive of non-self.* The common or material mind, not analyzing this inmost sentiment, is apt to regard its *subject*, whatever it be, as the mere subjective term of its observations; as a vague and undefined home of its thoughts and feelings. On the other hand, the profoundly metaphysical mind finds in the same sentiment an unceasing experience, unique in kind, depth and intensity, and corresponding with its conception of that metaphysical mystery, *spirit.* This experience all men have, but the experience is one thing, the idea from it another; and whilst the experience is immediate, there is perhaps no idea that is reached through so many successive abstractions. These the common mind does not make, and therefore to it spirit is, more than anything else, a phantasm of the imagination evoked by synthesis from weaker experiences; not a pure conception of the intellect elaborated from the intensest of all experiences.

The universal and necessary ideas enumerated above are amongst those placed, by ancient and modern metaphysicians, in those *Summa genera*, the *Predicables* and the *Categories* or *Predicamenta.* The common

mind has not noted the process by which, from one abstraction to another, it has mounted to them. They have not been presented to it, but it has, with forgotten attention, abstracted them by its powers; and, having reached them and become familiar with them, it constantly realizes them in the imagination as merely the uniform concomitants of its experiences; referring them to its accidental observations, instead of referring all its observations to them as classifications preëstablished by infinite design. Of like character are the common mind's conceptions of the material Heavens. Even if scientifically informed, it habitually refers the stars and the sun to the earth as principal, instead of the earth to the sun, and both to the starry universe as *summum genus*. The philosophic mind, however, rises above the prejudices of its habits, and, beholding in the pure conceptions to which it has climbed, the originary conditions that accompanied all created things into existence, and according to which all things are, becomes overpowered in its contemplative visions of them.

The idea of *self* lies at one extreme, and the Universals of the Categories at the other, of the whole range of ideas that the human mind can effect from its experiences; and a world of ideas lies between. The extremes are essential, and the rest are accidental, to a human understanding of things generally; and this distinction will point out the subject-matter of ideological science, which is the culmination of metaphysics.

The *accidental* ideas of the intellect are past counting; and any science of them, except as to the forma-

tive process of them, is not ideological. We shall therefore see, in due time, Ideology let drop all but the few ideas necessary to intellects more or less complete; and these, with their origin, formation and value, it will systemize as its characteristic objects. These are all, through successive abstractions, *universal ideas of universals;* and the human intellect, passing through the lower stages of infancy, childhood and mere maturity; then over the higher graduated planes of observation, culture and expansion; from time to time gives them birth from its interior meditation. In the mind of the Omniscient Creator of all things, before all things were, first, in the order of knowledge (to speak humanly) were the *possibles* and the *universals.* Classification, *species* and *particulars*, came next; last of all, the facts of the human faculties and the revelation of them to man's *self* by consciousness. In the mind of created man this order is reversed. In his order of knowledge come, first, the *solitary fact* of self-consciousness; then the primitive *facts* of his internal experience; next the remoter facts of his external observation, *particulars;* then, by classification, their *species.* So, rising by gradations as he expands, he reaches finally the *Generic*, the *Universal*, the *Categories* and the *Possible.* The poetry of Metaphysics begins to thrill as the intellect feels its own innate, expansive powers lifting it, higher and higher, amongst those TRANSCENDENT UNIVERSALS whose realities were coeval with the inception of the Universe; or which, like *Substance*, *Infinite*, *Absolute*,

ante-dated even Time and Space, real and unconditioned, without beginning.

Sublimated thenceforth, towards this realm of Universals is the soul for ever soaring, enamored of its height, and awed by the stupendous validity of its own conceptions.

Many philosophers improperly exclude Physics from the scope of Philosophy; and some most eminent physicists, puzzled and baffled at the overlapping of Physics by Metaphysics, have endeavored to extricate it from metaphysical legislation; not reflecting that all physical judgments are contingent and all metaphysical judgments necessary. In this endeavor, subordinating the ascertained truths of Religion and Philosophy to their unfinished sciences, and attempting to explain all by physical conceptions and misconceived induction, many have failed to do aught but destroy peace, and subserve the cause of error by sacrificing the known to the purely conjectural. Things in mere conjunction they have chosen to consider in connection; and things in connection they have chosen to consider in mere conjunction; not upon what themselves call proof, but upon evidence that they confess to be only plausible and persuading. So sandy are the bases of their inductions. Thus have some discarded entirely the metaphysical law of *cause and effect*, supplanting it gratuitously with what they call the law of *concomitancy*, which is no law, only an em-

pirical rule; whilst others claim the law of *cause and effect* to be operative between almost any two things that succeed each other. The former misconceive the inductive principle to be an objective and "constitutional" reason for the order of things, something which accounts for it without cause or production; and this lifeless and impotent image of their own creation they bend before as an idol, an original, not as a reflection of the great unseen. Prostrate they worship the golden calf in the valley, not discerning the tablets of the law on the mount.

The entire substantial matter of Physics is contingent; it might be or might not be; but many of the laws that govern it are necessary and eternal. All its laws are fixed, and cannot be otherwise than subordinate to the *a priori* principles of Metaphysics. *The whole is greater than its part*, and the part of a rock cannot be as great as the whole rock; nor can a rock be and not be at the same time. The shortest road between two points must be a straight road; and the shortest wall to enclose a given area of ground must be a circular wall. Physics entire is based upon the metaphysical conceptions of *substance* and *quality*, and supposes the metaphysical law of *cause and effect;* and all its laws are correlated in human thought with other laws, whilst practical thought supplies the data for their application. The division then is wrong that excludes Physics from Philosophy. The physical sciences, however, are so many that a philosophic *summa* would embrace all true books of science, art,

morals, poetry, music, beauty and utility, that have been, or ever will be, written.

Science belongs to Logic, Metaphysics, Ethics, Physics and Philosophy; wisdom only to Philosophy.

The advance of physical sciences, following and stimulating a great accumulation of facts and observations, has been, within the past two centuries, unprecedented. The world has come together and condensed. Distant nations touch each other; and the facts and traditions of all are supplied to Science and Philosophy. The human mind is now more keen than ever before to analyze the facts of nature, to discover her arcana and to employ them; and there can be nothing in this scrutiny but what is natural and right, provided it be with a due reverence for the authentic traditions of the most enlightened of mankind through succeeding ages; and for the Spirit of Christianity, which is the conscience of Civilization. Alas! however, such proviso is becoming more frequently forgotten or despised. The freedom that belongs to Philosophy is confounded with the freedom that belongs to Science; and over narrow discoveries in Science great leaps in Philosophy are made. Science is entirely free within its own limits before promulgation, but is false to itself and to its place in the order of human knowledge, if it promulgate other than proved conclusions. Philosophy, however, although free from trammels, being in a higher plane, is not so free as Science. It is not free to reject good, or to accept from Science its hypotheses, or embryos, or anything but its accomplished

facts. The disregard of this distinction has made men, eminent in Science, presumptuous pedagogues in Philosophy; and others admire, dazzled by their brilliancy, not discerning that their electric lights are not the light of day.

It should be recognized that pure Science is according to *deductions* in reasoning; and that with *induction* the scientist *as scientist* has nothing to do. Postulates and hypotheses are his, but it does not belong to him to speculate upon the relation of his suppositions or facts to other sciences; and when he does so speculate he attempts the correlation of sciences and plays, for the time being, the role of philosopher. Grand reputations have, from time to time, been made by men in praiseworthy scientific pursuit; and their true deductions are all valuable in Theology, invaluable in Philosophy. Such men have a right to speak with the highest authority in Science. When, however, with their laurels on their brows, they stand in public and speak oracularly of philosophic inductions to those who do not distinguish, they are, whether they mean it or not, impostors deceiving by spurious reputation.

No one, then, in his scientific mood, should deal in inductions in Philosophy, for his mind is not sufficiently grasping the relations of many sciences with one another. The substantiality of his science will master the unsubstantiality of his correlations, and Philosophy be made, in him, subordinate to Science. Out of Science alone cannot be drawn wisdom of thought or action. The active synthesis of the mind

and the knowledge of its powers, with the viewing of all things on all sides, are necessary in order that a man be philosophic; and, amongst the elements that make up this healthy mood scientific thirst is small, whilst an abiding care for the good of all mankind is chief.

Bacon and Newton were Philosophers in the true sense of the word; whilst Tyndall and the galaxy of eminent physicists now shining in Britain, are Scientists in the true sense of the word.

In the treatment of Logic I have not adopted the analytical method, as applied to the whole, or as applied to a general plan of Philosophy; only as applied to the particular parts. The general method is synthetical. A treatment of the entire science according to strict analysis would commence with the primary fact of *self* conscious of *self* and *non-self*. From this, the clearest known of all facts, it would pass to the constant experience of *reasoning*, the completest object of Logical Science; thence to its most compound elements, and ending with the simplest, the idea. The progress would be always from the known to the discovery of the unknown. Since, however, in the beginning, students are not supposed to know of the existence, to say nothing of the nature, of *critical* Philosophy; and, without hesitancy, concede to their ideas the objective value which really belongs to them; it was thought well to take advantage of this concession, in order to not introduce *methodical doubt* to minds not prepared to grapple with it. Now, how-

ever, it is understood; we can suppose doubt whenever it suits our purpose; and it becomes Philosophy to doubt all that is not from correct reason or from fundamental experience. Where these are not, doubt becomes stagnant skepticism and has no scientific status.

At last we are free from the machinery of Logic through which analysis conducted us, and we desire to proceed. If our way were to be through all Philosophy, it would lie first, to be regular, through the domain of Physics, the region that we see and hear and feel about us; the source of our accidental ideas. Its sciences are those whose data are given by the senses, and whose characters are determined by the directions which researches into matter take. These directions are, at this late day, unexhausted; so countless are the various relations of matter and its modes. These are the common sciences of schools, and we must pass them by, for our pursuit is of the science of things that lie beyond the senses. I have said that many of the laws governing Physics are necessary and according to metaphysical principles; I have now to call your attention to a science lying, as it were, between Physics and Metaphysics, every one of whose laws is necessary and according to metaphysical principles. This is Pure Mathematics; and it is an elaborate system wherein identities eternally pursue each other; for, in all its propositions, subject and predicate

are identical. Out of the narrow grooves of identities or equivalents, formed by mental abstractions, it does not issue. Physico-Mathematics, however, applies the eternal principles of pure Mathematics to the Material Universe, thus showing the subordination of Physics to Metaphysics.

Logic has left us, for metaphysical investigation, in possession of its ultimate element as its only part not yet analyzed. This is *idea;* and, since it is intimately connected with every conscious change of the human thinking principle, with every thought, it is plain that, in entering upon Metaphysics, the whole Empire of thought is before us.

ANALYTICAL CATECHISM.

Question. What mental process do men have in operation when they argue or investigate?

Reply. Reasoning.

Q. Do not all men of sound mind know how to reason?

R. Yes; more or less perfectly and correctly.

Q. Can men learn to reason more perfectly and correctly than they naturally do?

R. Yes; by acquiring a scientific knowledge of their reasoning process. This would afford a knowledge of its elements, their relations to each other, the laws of reasoning and rules for correct reasoning.

Q. What is such a science named?

R. The science of Logic.

Q. What is the characteristic object of logical science?

R. Thought as a means of attaining to true knowledge.

Q. What would follow the use of scientific rules for reasoning?

R. Habits of correct reasoning according to science.

Q. Is Logic then only a theoretical science?

R. No. Habits are arts, and are perfected by exercise; and Logic is a practical art, as well as a science.

Q. What is the proper method of acquiring a scientific knowledge of reasoning?

R. Analysis. This takes what is known and separates it mentally into its elements; going, step by step, from the known to the unknown, until all is known.

Q. Is reasoning a proper starting-point for a full, philosophic investigation; for a connected course of Philosophy?

R. It is, for a connected course according to analysis. It is by reasoning that men dispute, differ and investigate. Reasoning is a patent fact to all, and is an undisputed ground; for, if a man deny the validity of reasoning, there is no teaching him or arguing with him.

Q. What is a reasoning?

R. It is a deduction of knowledge from two other knowledges.

Q. What is knowledge?

R. All knowledge is judgment.

Q. How is one judgment deduced from two others?

R. By perceiving that the totality of the two judgments is identical in meaning with the judgment deduced.

Q. What is this identity called?

R. The formal identity of reason.

Q. How do you know that you are rational?

R. I have internal experience of the fact.

Q. What do you mean by internal experience?

R. The perception of what occurs in the spirit.

Q. What is that perception called?

R. Consciousness, or internal sense.

Q. Are ideas, sensations and remembrances perceptions of what occur in the spirit?

R. No. They are modifications, products of other faculties. Consciousness perceives the modifications of the spirit effected by other faculties without directly perceiving any of the causes.

Q. Does consciousness perceive indirectly?

R. Indirectly or reflexly it distinguishes the different modifications, as to kind, from each other. Reasoning, feeling, remembering, sorrow, joy, &c., are distinguished by consciousness.

Q. What do you call that which is perceived by consciousness?

R. Internal fact.

Q. Is there any other kind of fact?

R. Yes, there are external facts.

Q. What are external facts?

R. Things that are made manifest to the mind by means of the external senses.

Q. What is any fact?

R. Anything whatsoever that is and is manifest to the mind.

Q. Why do you sometimes say *spirit* and sometimes *mind?* Is there any difference between them?

R. There is no substantial difference. Mind is used

in the sense of being a congeries of man's knowing powers, which are powers of the substantial spirit.

Q. Can the fact of consciousness be proved?

R. No, nor any of the facts perceived by it. All these can only be experienced.

Q. Why can they not be proved?

R. Because proof is a result of reasoning, and we only know the fact of reasoning by consciousness.

Q. What is a syllogism?

R. A reasoning expressed according to proper form.

Q. What are the elements of a syllogism?

R. Three propositions (which are judgments expressed in words), containing each two terms.

Q. Are there then six terms in a syllogism?

R. No, there are only three terms; and this is the substance of the first and most important rule.

Q. Explain that.

R. Of the four terms of the first two propositions (which are called the *premises*) one term is common to both. There are therefore only three in the premises. The other two terms are repeated as the terms of the last proposition or *conclusion.*

Q. What are the propositions of the premises called?

R. The two combined are called the *antecedent* of the syllogism, and they are separately the *major* and *minor* propositions.

Q. Why are they called *major* and *minor?*

R. Because they contain respectively the *major* and *minor* terms of the syllogism.

Q. Why are the terms so distinguished?

R. Because one includes a greater number of individuals than the other.

Q. Give an example.

R. When I say that man is mortal and that I am a man, I find that the term *mortal* includes more individuals than the term *I.* It is therefore the *major* term, and the proposition containing it in the premises is the *major* proposition.

Q. The term *man* is in both propositions. What is it called?

R. The *common*, *mean*, or *middle* term.

Q. What rule is there for immediately distinguishing the different terms of a syllogism?

R. The term which does not appear in the conclusion is the *middle.* The subject of the conclusion is the *minor*, and the predicate of the conclusion is the *major.*

Q. A syllogism is said to consist of *matter* and *form.* What is meant by this?

R. The *matter* is the three propositions which compose it; the *form* is the connection of the conclusion with the premises, and is called also the *consequence.*

Q. Are not the terms the matter of the syllogism?

R. They are the remote matter; the propositions are the immediate matter.

Q. Can a syllogism be materially true and formally false, or *vice versa?*

R. It is materially true when all the propositions are true, although formally false for want of consequence; and it is formally true when there is consequence, although each proposition be really false.

Q. When the premises are true and there is consequence, or proper form, can the conclusion be false?

R. Never. The truth of both premises, in such case, carries the truth of the conclusion; as the falsity of one of them would carry the falsity of the conclusion.

Q. What is the object of the eight syllogistic rules?

R. To determine the formal truth of a syllogism; that is, the identity of conclusion with antecedent.

Q. Are there other modes of reasoning besides the syllogistic form?

R. There are; such as sorites, enthymeme, dilemma, &c., but all are reducible to the three-term, or syllogistic, form as the essential and primitive form of reasoning; and all are governed by the syllogistic rules.

Q. Is that form of reasoning in which the truth of one part of a proposition is deduced immediately from the truth of the other part, reducible to syllogistic form?

R. The question is a sophism of *false supposition;* for in such a proposition there is no deduction or reasoning. When the truth of one part of a proposition carries the truth of the other part by *immediate* perception there is *immediate consequence*, whereas in reasoning there is *mediate consequence.*

Q. What is judgment?

R. It is an act of the mind by which it perceives several ideas as agreeing or disagreeing.

Q. Is the perception of the relationship of agreement or disagreement a judgment?

R. No. Such a perception is the *evidence* which moves the mind to form its judgment.

Q. Is judgment, then, an act of reflection of the mind upon its perceptions and their relations, and not a mere concrete perception of them fused together?

R. Precisely. No mere perception through consciousness, sensibility or memory is a judgment. The complex perceptions of these faculties must be mentally divided into elements which must then be compared; after which the uniting of them in the mind, as agreeing or disagreeing, constitutes judgment.

Q. Can brute animals effect judgment?

R. No. They have only concrete perceptions without intellectual reflection.

Q. Can they not decompose objects by separating in their minds one part from others?

R. They can. Such decomposition, however, is only sensible, not intellectual. Sensible analysis decomposes sensible objects; intellectual analysis ideas, which are intellectual versions of things. The brute mind, moreover, does not recombine by reflection and comparison.

Q. How is judgment divided?

R. Into *matter* and *form*.

Q. What is the matter of judgment?

R. The *subject* and the *predicate.*

Q. What are these?

R. The subject is that about which something is affirmed or denied; and the predicate is whatever is affirmed or denied of the subject.

Q. Are there, then, only two ideas or terms perceived in judgment?

R. There are always three, subject, predicate and the relation of agreement or disagreement.

Q. What is the *form* of judgment?

R. The mental act by which agreement is affirmed or denied. It consists in the verb *is* or *is not.*

Q. Is this the case with judgments regarding past and future?

R. It is. Judgment is a present act of the mind, and affirms or denies in the Present tense of the Indicative mood what the mind *hic et nunc* perceives as past, present, future or contingent.

Q. What is a contingent judgment?

R. That which declares the relationship between subject and predicate, but not necessarily; as, *I shall rise to-morrow.*

Q. What is a necessary judgment?

R. That which declares such relationship by necessity; as, *The whole is greater than its part.*

Q. By what sign can you distinguish these?

R. In affirmative judgments a judgment is necessary when the destruction of the predicate destroys the idea of the subject; and it is contingent when the destruction of the predicate does not destroy the idea

of the subject. In negative judgments a judgment is necessary when the affirming of the predicate destroys the idea of the subject; and it is contingent when the affirming of the predicate does not destroy the idea of the subject.

Q. What do you gather from that explanation?

R. That every necessary judgment is *identical* or *analytical;* that is, there is no real difference between subject and predicate; and that the addition of the predicate affords no additional knowledge to that possessed in the knowledge of the subject. Also that every contingent judgment is *synthetical* and does afford additional knowledge.

Q. What else do you infer?

R. That every necessary judgment is *a priori;* that is, independent of experience, not empirical; whilst every contingent judgment is empirical, *a posteriori.*

Q. What is an axiom?

R. A theoretical self-evident proposition.

Q. What do you mean by self-evident?

R. Possessing evidence that is intrinsic, not requiring demonstration.

Q. By what principle are all axioms affirmed?

R. By the *principle of identity*, which is as follows: *what is is, and what is not is not.*

Q. What is the principle of *excluded middle?*

R. It is a principle from which every alternative is excluded except that expressed, and is expressed as follows: *Everything either is or is not.*

Q. What is the *principle of contradiction?*

R. *It is impossible that a thing be and not be at the same time.* To this principle are reducible the other two, and it expresses the impossibility of contradiction in thought. It is based upon the fact, and our knowledge of it, that existences are real.

Q. Is judgment an act commanded by the will?

R. No. It is an act elicited by the intellect; and we often effect judgments to which the will is repugnant. Judgment follows evidence spontaneously.

Q. What is the utility of evidence?

R. To manifest truth and prompt the intellect to know it.

Q. Why does evidence enter into logical science?

R. Because it furnishes the mind with truths to reason about. It ministers to the intellect in reasoning.

Q. What is evidence?

R. Evidence, considered relatively to *truth* and *judgment*, is the criterion of truth and the motive of judgment. In itself it is a perception of relations between ideas.

Q. What is meant by criterion of truth?

R. A rule or gauge by which truth is recognized. We know nothing at all except according to evidence.

Q. What is meant by motive of judgment?

R. That which moves the intellect to judge.

Q. What is the nearest evidence to the mind?

R. That of *consciousness*, which reveals all other evidences.

Q. What is meant by direct and indirect evidence?

R. Direct evidence is the direct perception of rela-

tions by one's self; indirect evidence is the knowledge of them through the testimony or authority of others, or by inference.

Q. What is meant by mediate and immediate evidence?

R. Mediate evidence is extrinsic; immediate evidence is intrinsic.

Q. What truths are known by intrinsic evidence

R. All self-evident truths only.

Q. What are the qualities of evidence?

R. Metaphysical or rational, physical, and moral.

Q. How are they distinguished?

R. Metaphysical is purely intellectual; physical is sensible; and moral is derived from our knowledge of the nature of a moral and free witness.

Q. What are the various evidences as distinguished by their natures?

R. Those from consciousness, memory, sensibility, induction, testimony, authority, and reason.

Q. Can the evidence of consciousness be ever doubted?

R. No one ever does or can doubt it. It affords certainty and is the foundation of all other certainty; and all the data of consciousness are primitive, real and certain experiences. It is by consciousness that we perceive and distinguish the existence of, and the data of, all the other faculties.

Q. Can the evidence of memory be doubted?

R. Not when circumstances are distinct. Distinct-

ness of circumstances, as reproduced by memory, is impossible without their reality.

Q. How is it then that memory often fails?

R. The question contains an equivocation. Attempts and accomplished acts are not the same. Attempts of memory fail and deceive, whilst accomplished acts are not failures and do not deceive.

Q. Can the evidence of memory be corrected?

R. Imperfect memory may be corrected by perfect memory.

Q. Can the evidence of sensibility be doubted?

R. It is so subordinate to reason that, unless rationally governed, the evidence of the senses is very uncertain; and the evidence of one sense is frequently so insufficient that it must be fortified by that of other senses.

Q. Give an example.

R. A straw in a glass of water is bent to the sight, but not to reason or to feeling. Reason and feeling both correct vision.

Q. What are the immediate objects of sensibility?

R. Qualities of things only, not their realities.

Q. What are the realities of things?

R. Their substantial essences, which are invisible and intangible. They are the subject and support of the qualities.

Q. What are the qualities of things?

R. They are those appearances which, not existing in themselves, inhere in something else; like color, size, shape, weight, hardness, motion, &c.

Q. Does not sensibility prove the substantiality of things?

R. The evidence of sensibility establishes that there is something else besides the perceiving spirit, something else substantial affecting it, at every sensation.

Q. Does it establish with certainty what the substantial thing is?

R. Not of itself alone. The senses are organs and must be *rationally* known to be in normal condition; 2d, the object of a sense must be properly present to it according to the nature of the particular sense; 3d, there must be coördinated experiences, either of the same sense or of different senses, which confirm each other. When these conditions are had, sensibility affords certain knowledge, under the government of reason, as to sensible substances only.

Q. Are there substances that are not sensible?

R. Innumerable, through the deficiency of sense. There are stars too distant to be seen and atoms too fine to be seen or felt. Larger objects are recognized, and even seen, only within circumscribed limits; powders that are visible are impalpable, and the substantial soul is unrevealed to any sense.

Q. In general terms, as to what is sense deficient?

R. 1st, as to what is purely intelligible; 2d, as to what is in any way preternatural; 3d, as to what is out of a particular sense's sphere.

Q. What is the difference between quality, accident and attribute?

R. Accidents and attributes are both qualities, and

they differ in this, that attribute is an essential quality, whilst accident is not.

Q. What is an essential quality?

R. Any quality without which a thing cannot be conceived to be what it is.

Q. What is *induction?*

R. It is a principle of reasoning, not scientific, but philosophic, according to which one discerns that what belongs to many individuals belongs to their species or genus. It is not an *objective* principle of action, or cause why things exist or are modified; but a *subjective* principle, or rule of thought, according to which the mind reasons.

Q. What is the essence of induction?

R. Law and its application discerned. It is based on the knowledge that law and order underlie the manifestations of the whole material Universe and the acts of God's creatures when these are discerned as acting according to the fixed laws of their natures.

Q. Does induction afford certain evidence?

R. Its evidence is indirect, and therefore weaker than direct evidence. To say that there are degrees of strength in it, is to say that it is not absolutely certain. A doubt, or a fear of doubt, is likely to exist, either as to the law or as to its application, or as to some extrinsic interference.

Q. Can inductive evidence be strengthened?

R. It can be strengthened even in its inductive quality by collateral support; and it can be so far strengthened as to change its nature and become *de-*

ductive evidence. This is when both law and application are otherwise proved.

Q. What is the utility of induction?

R. It is useful as the basis of proper philosophic speculation. Although very strong, if applied to science, whatever science it alone develops, it necessarily leaves unfinished. Science, to be complete, must be a series of *deductions.* Induction has been the occasion of great discoveries and scientific progress, and the occasion of many and most pernicious errors.

Q. Is inductive reasoning a modern discovery?

R. By no means; men have inducted from their experiences from time immemorial.

Q. Does the evidence of *testimony of men* afford certain knowledge?

R. When men are known to be testifying according to the fixed laws of their nature their evidence affords certain knowledge; when they are feared to be testifying according to the bias, or diverting power, of passion or prejudice, they do not.

Q. Can the evidence of testimony of men be strengthened?

R. It can, both intrinsically and extrinsically: intrinsically by more of it, and the purer the quality the greater the strength; extrinsically by any other evidence whatever. Testimony of men is cumulative to the point of being irresistible by any one; and it may be so weak as to move no one.

Q. What is the evidence of *authority?*

R. It is evidence derived, not from any fixed law of

its subject's nature, immediately; but mediately, from an extrinsic and superior source.

Q. Can the evidence of authority afford certainty?

R. If the authority be properly established and undoubted, its evidence can afford certainty, both subjective and objective; if merely undoubted, it can afford subjective, without objective, certainty.

Q. How can such authority be properly established?

R. By nature, reason, or act of God. A proper and intelligent parent is such by nature to his child. A man or body of men may be such according to the strength and validity of the reason that determines; as the Prophets and Apostles proved their authority to the reasons of men. Authority may be, by God, established in the minds of men, either naturally, by manifestation to the senses, or supernaturally, by inspiration or other mystery.

Q. Can the evidence of *reason* afford certain knowledge?

R. It has been said that syllogisms true as to *form* and *matter* cannot deceive. The same must be said of reasoning, since this is syllogism unexpressed.

Q. Can the validity of reason be proved?

R. No, it cannot, for proof is the result of reasoning itself. The valid evidence of reason, like all evidences, is, finally, evidenced by consciousness.

Q. How are propositions divided?

R. According to quantity, quality, relation and modality.

Q. How are they divided according to quantity?

R. Into particular and universal. Universal are those in which the subject contains the whole of a genus or species; particular are those in which the subject is less extensive.

Q. How are propositions divided according to quality?

R. Into affirmative and negative. Affirmative are those in which the predicate is affirmed of the subject; negative are those in which it is denied.

Q. What are those propositions in which the negative particle is not applied to the formal verb, but to the material subject or predicate?

R. They are called *infinite*, and are in reality affirmative propositions, since the quality of the verb is affirmative. This is plain from the following examples: No man *is* a brute; a man *is* no brute.

Q. How are propositions divided according to relation?

R. Into categorical, conditional and disjunctive. Categorical are those in which the *copula* is used without condition; conditional are those in which the *copula* is used with condition; disjunctive are those in which one of several predicates is affirmed without determining which.

Q. Give an example of each.

R. Man is rational, is categorical. *Every man is, if normal, rational*, is conditional. *Everything either is or is not*, is disjunctive.

Q. How are propositions divided according to modality?

R. Into problematical, assertorial, and apodictic or necessary. Problematical are those in which the predicate is affirmed to be able or not to agree with the subject; as, *if I let go what is in my hand it will fall.* The letting go may, or may not, take place. Assertorial, or contingent, are those in which the predicate is affirmed actually, but not necessarily; as, *I do let go what is in my hand.* Apodictic are those in which the predicate is affirmed or denied necessarily; as, *what was in my hand therefore falls.*

Q. What are the elements of judgment?

R. Ideas.

Q. What is an idea?

R. Idea may be considered metaphysically, as to its nature in itself; and it may be considered logically, as to its place in the order and operation of reasoning. Metaphysically, it is a modification of the intellect relatively to things, and is effected by the intellect itself, following internal or external experiences. Logically considered, it is the lowest purely human element in the order of reasoning, and is an interior version of things without any judgment about them.

Q. Is there a lower element than idea in the order of reasoning?

R. There is, but it is not a purely human element. Simple *apprehension* is a concrete perception and precedes ideas as an element, but it is common to man and brutes.

Q. Is the mind active or passive in apprehension and idea?

R. It is receptive, passive, in apprehension, and intellectual (which is active) in idea.

Q. How are ideas classified?

R. The principal classification of them is into *objective* and *subjective*, *concrete* and *abstract*, *sensible* and *intelligible*, *complete* and *incomplete*, *simple* and *complex*, *material* and *formal*, and *particular* and *universal.*

Q. What is the difference between objective and subjective ideas?

R. Objective is relatively to the object, on the part of the thing thought of; subjective is relatively to the subject, on the part of the thinker.

Q. Can a subjective idea become objective?

R. It can, when, by reflection, it becomes, in further thought, the object of a new idea. It is then called a *subject-object.*

Q. What is the difference between concrete and abstract ideas?

R. Concrete idea is a perception of subject and its qualities together without any mental separation of them. It is always complex. Abstract idea is formed by abstracting one or more elements from a complex object or idea, whether the part abstracted be subject or quality. It may be simple or complex.

Q. What are simple and complex ideas?

R. A simple idea has no mental elements; it is a whole without parts. Complex ideas contain a plurality of elements.

Q. How are simple ideas formed?

R. Every object in nature is complex, and simple ideas are formed by abstracting a simple element from them. Some simple ideas are formed by a succession of abstractions, and in this way the simple ideas of the Categories are formed.

Q. Give an example of the latter.

R. When I think of a white horse, I form, by first abstraction, the simple idea of *whiteness*. Then, by comparison, I observe that whiteness and some other things have this in common, that they inhere in subjects; after which I form, by a second abstraction, the more extended idea of inherent or *quality*.

Q. What do you observe in regard to ideas formed by successive abstractions?

R. That each abstraction affords a more extended idea, an idea predicable of more things. The *Categories* or *Predicables* are the highest abstractions, more generic than other ideas, and therefore called *summa genera*. Some of them are predicable of most things that are, as *substance*, *mode;* and some are predicable of all things separately, as *being*, *one*.

Q. What are ideas *sensible* and *intelligible?*

R. Sensible is that which is derived immediately from the external senses, and intelligible is that which is derived immediately from the interior faculties and sensibilities.

Q. What are the interior faculties?

R. Consciousness, desire, will, imagination, memory and intellect. Each of these is a single faculty, except

intellect, which is a compound of analysis and synthesis.

Q. What are the interior sensibilities?

R. They are the passions, such as love, fear, hatred, ambition, &c.

Q. What are ideas complete and incomplete?

R. Complete is either a simple idea, or a complex idea which comprises all the simpler essential ideas, of a thing; incomplete does not comprise all.

Q. What are ideas *material* and *formal?*

R. A formal idea is according to the form assumed in the mind, according to the actual, *hic et nunc*, conception. A *material* idea is according to the object, without regard to any particular or actual conception.

Q. Give an example.

R. The material idea of a Bible is leaves, printing and cover; its formal idea, in our minds, is, *the revelations of God.*

Q. What are ideas *particular* and *universal?*

R. An universal idea is generic or specific; that is, it includes all individuals that are, or that can possibly be, included in a genus or species. A particular idea is any one that includes less.

Q. What is *individual?*

R. That which is conceived as perfectly determined.

Q. What is *species?*

R. That which many individuals have identically, and which constitutes their common essence.

Q. What is *genus?*

R. That which is common to several species.

Q. Are the terms *species* and *genus* absolute?

R. They are relative to each other, and *species* is relative to *individual.*

Q. Can all *genera* become *species?*

R. All except the highest, which transcends all other genera. This, not being contained in any genus higher, cannot, on that account, become species.

Q. Can all *species* become *genera?*

R. All except the lowest. This, not being able to include a lower species, only individuals, cannot, on that account, become genus.

Q. How is a species determined?

R. By determining all the attributes of one of its individuals.

Q. What is an *attribute?*

R. Any quality without which a thing cannot be conceived as what it is.

Q. What is *specific difference?*

R. That difference by which one species of a genus is distinguished from all others.

Q. What is *extension?*

R. The number of individuals embraced in an idea.

Q. What is *comprehension?*

R. The number of attributes embraced in an idea. From this it follows that a *generic* idea is more *extensive* and *simple* than a *specific* idea, whilst a *specific* idea is more *comprehensive* and *complex* than a *generic* idea.

Q. What is a *definition?*

R. A *nominal* definition is the union of the nearest

genus and the specific difference. A *genetic* definition is a description according to the generation of the idea of a thing, by commencing with simpler ideas and progressing to the more complex idea of the thing to be defined.

Q. What is the difference between *definition* and *division?*

R. Definition is according to attributes, and division is according to individual components.

Q. What is the object of definition?

R. To distinguish a thing unmistakably from all others.

Q. What is the object of division?

R. To so arrange a subject that it can be considered part by part, and so avoid confusion from considering too many parts at one time.

Q. In a course of strictly analytical, critical and connected Philosophy, where does Logic begin and end?

R. It begins with the patent fact of *reasoning* and ends, by decomposition of *reasoning*, with its ultimate human element, *idea.*

Q. How should analytical Philosophy then proceed?

R. By an analytical investigation of *idea.*

Q. What science investigates ideas?

R. Metaphysics. It takes up the philosophic train where Logic leaves it, and examines ideas as to their nature, formation, origin and value.

Q. How does it pursue this examination?

R. By means of two sciences, Psychology and Ideology, which are the two parts of Metaphysics.

Q. Explain the method more particularly.

R. Psychology is the science of the human spirit, and explains its nature and faculties. Some of these faculties afford the material for ideas, thus showing their origin and value; whilst others elaborate the material into ideas, thus showing their nature and formation.

Q. What is the characteristic object of Ideology?

R. A few of the most highly abstract ideas, which are common to all men and are essential to the human understanding.

Q. What are such ideas called?

R. Categories, or Predicables.

Q. What is meant by the *value* of an idea?

R. Its real worth; that is, its worth as determined by its correspondence to reality existing out of the mind. The *value* of an idea is proportionate to this correspondence.

Q. Can it be denied that what we call ideas of objects correspond to objective realities existing outside of our minds?

R. It cannot be denied, yet some metaphysicians profess a doubt about it. This is, however, illogical, since the same authority, *consciousness*, that informs the spirit of its reasonings and doubts, informs it also of external realities that affect it.

Q. How does consciousness do this?

R. By enabling it to distinguish between its modes

that are effected by itself and those that are not. The latter are *effects* of real *causes* external to it.

Q. Can universal skepticism exist?

R. No, it cannot; it involves contradiction. Skepticism is the result of reasoning and is a suspension of the mind; and the validity of reasoning, as well as the real existence of the reasoner, is implied in the doubt. Therefore skepticism cannot be universal.

Q. Is there not a skepticism that results, not from reasoning, but from a lack of reasoning?

R. Such a condition is not a suspension of the mind, not skepticism; it is pure ignorance.

Q. What is the difference between objective and subjective Philosophy?

R. Objective Philosophy assumes the real value of ideas; subjective Philosophy examines and demonstrates it.

Q. What is a science?

R. A series of connected reasonings designed to give the clearest attainable knowledge about a thing.

Q. Is physical science subordinate to metaphysical science?

R. It is. Physical science is not physical things, but our knowledge about them; and there are certain immutable metaphysical principles, laws, and relations, according to which we ought to know all things physical to exist. Such are the principle of contradiction, the law of cause and effect, and the relation of substance and quality.

Q. Are all sciences related to each other

R. They are all parts of one Universal Science; and

no science, when truly completed, can conflict in any degree with any other, when truly completed; since there is but one Author of all things.

Q. Illustrate this.

R. A study of the creation in one direction develops Astronomy, in another direction Chemistry, in another direction Geology, in another direction Physiology, &c., and all are about the same, or parts of the same, things. As a result of such studies, human thought can effect a correlation of such sciences, as well as of all its various particular knowledges, imperfectly, according to its powers; can ascertain the codes of laws by which each science is governed; and can evolve a legislation by which itself governs them as to one another.

Q. How is human thought limited?

R. Human thought operates according to specific faculties, each one of which has its special functions and limitations; and the number of primary faculties is only seven.

Q. What is human thought?

R. It is, broadly, any change or modification whatever of the human thinking principle of which it is conscious; and such modifications are all effected by means of the faculties. They include all that man can, by any possibility, naturally think, do, feel or imagine; and are his complete natural limitation.

Q. What do you call the science of universal human thought?

R. Philosophy.

END OF PART I.